

AMERICAN AGRICULTURIST.



Agriculture is the most healthy, the most useful, and the most noble employment of man.—WASHINGTON.

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BY

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TERMS.

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PORK—BACON—HAM.—No. 1.

FROM A Prize Essay, an exceedingly interesting paper, on the "Breeding and Management of Pigs," lately published in the Journal of the Royal Agricultural Society of England, by Mr. Thomas Rowlandson, we condense the following and succeeding articles on the respective merits of conversion into fresh meat, pickled pork, bacon, and ham, with the modes of preparing the same:—

In choosing a pig for any of the purposes above enumerated, or, in fact, for any purpose, or of any breed, there are certain points which should be looked for in all, namely, the skin should be soft, and thin, of a bright pink color; the neck short, the chest wide (which denotes strength of constitution); broad, straight back, short head, and fine snout; small legs and hoofs; the snout should be slightly curved upwards, and, in a large breed, it not unfrequently happens that there exists a pretty prominent swelling on the snout between the nasal and frontal bones; the sow should have at least twelve teats. If properly supplied with food, the pig can be profitably sent to the butcher from the age of one month to four-and-twenty; it would, therefore, be improper to pass over in this place, the relative merits of the various breeds in profitably rearing those luxuries yeilded sucking pigs, which the late Charles Lamb declares to be, "Of all the delicacies of the whole *mundus edibilis* I will maintain this to be the most delicate. I speak not of your grown porkers—things between pig and pork, those hobble-de-hoys—but a young and tender suckling, under a moon old, &c."

It is known that the large English breed are prolific and good mothers; that the Chinese have an early aptitude to fatten, are prolific, but bad nurses; if, therefore, the object in breeding is to get quit of the progeny, about or soon after they have arrived at lunar maturity, we should put a Chinese boar to the large English sow; if we want the hobble-de-hoys of eighteen or a score pounds' weight, we must breed the Neapolitan cross already noticed, but which I shall in future define by the term improved Essex breed. No description of breed will raise sucking pigs to the same size at six weeks old as the cross just noticed; they also form excellent porkers, speedily attaining a weight of 48 to 56 lbs. (the favorite size for porkers); if allowed to grow much larger, it will be found to pay better to treat them as stores until they are 10 or 12 months old, and then put them up to fat-ten; in this way, however, they are not so profit-

able as the improved Essex, neither do they make such fine bacon as the improved Berkshire. For the purpose of obtaining moderately, or even large-sized hams and bacon, no breed stands so high as the improved Berkshire, which may be considered the most generally useful to a farmer who desires a sort generally profitable in any stage of its growth. The improved Berkshire sow will suckle ten to a dozen sucking pigs within a moderate period, especially if they are assisted by artificial means hereafter to be noticed; in this respect, however, it is by no means equal to the improved Essex or the Old English sow when put to a Chinese boar. For the purpose of making fine, delicate pickled pork, the Berkshire is inferior only to the improved Essex; and for the purpose of making ham and bacon of moderate size, namely, from 10 to 12 stones' weight the carcass—not quite equal to the Essex at the former, but pretty nearly so at the latter and increased weights. The distinction here drawn arises from the fact that the Essex breed, if properly maintained from the first, arrives very early at maturity, in so far as its frame or bony structure is concerned, whilst the Berkshire takes a longer period to arrive at its ultimate and larger size; the consequence is, that a small breed like the Essex will, with proper forcing, arrive at its full natural size by the time it is nine months old, whilst the Berkshire takes 12 or 15 months ere it ceases to grow.

Now, it is a well known fact, that during the earlier stages of animal life, the nutritive parts of the food ingested by the animal and assimilated by its organism, is appropriated principally to the development of the frame, the growth of the bones, tissues, and muscles, together with a moderate amount of fat, the uses of which latter will shortly be noticed. Of the inorganic constituents of the food, phosphate of lime is the one for which there exists the largest demand, constituting as it does so large a portion of the gross weight of bones, from 15 per cent. at birth to 50 per cent. when aged, and entering more or less as a constituent of the muscles and tissues. Of the nitrogenous portions of the food of animals, the muscles, tissues, and gelatinous substances absorb the whole excess above the quantity excreted. Of those articles of food whose chemical composition consists of carbon and hydrogen, such as starch, sugar, fat, &c., there can be little doubt but they, by their combustion, afford heat, and further, the amount of their excess beyond that required for the supply of animal heat, and not

otherwise excreted, are assimilated by the animal system, in the form of fat, also aiding in the composition of other animal substances requiring, in addition to nitrogen, carbon, hydrogen, and oxygen for their formation, such as muscle, gelatine, &c. It forms no part of this question whether fat is assimilated only from fat which pre-existed in the animal's food, as asserted by Dumas and Boussingault, or that fat is formed from the starch of the food.

According to all that is at present ascertained on this subject, the dispute has little practical bearing on the matter in question; this much, however, is certain, that all parties concur in opinion, that animal heat is derived from the combustion of the carbon of the starchy matters ingested, and may be so by the combustion of fatty matters; in fact, in cases of fever and starvation, we know no other way how the animal heat is maintained than by combustion of the fat previously stored up in the system. The rapid diminution of weight in animals attacked with fever is well known, and is invariably coincident with an increased circulation of the blood and higher animal temperature.

The preceding brief physiological dissertation is inserted because, on the circumstances just detailed, in a great measure depend the relative qualities of the different breeds for early or late fattening; and also has a most important bearing on the kinds of food which ought to be employed at the various periods of their growth, as will be shown hereafter when the subject of feeding and fattening is taken into consideration.

FISH PONDS ON LONG ISLAND.

THE Suffolk Democrat has a very interesting article on the raising of fish for market and food. The following statements may prove of utility:—

In the immediate vicinity of our office are two ponds containing trout, where the propagation of fish has, we believe, been satisfactorily settled by the proprietors. One of these ponds is on the farm of Dr. Rhineland, and the other on the farm of Ezra C. Prime, Esq. These ponds have been artificially constructed, according to the judgment and taste of the gentlemen named, and contain, at present, a vast number of trout, including some large specimens. Gideon Lee, formerly Mayor of New York, but now deceased, constructed on his farm, near Seneca Lake, several years ago, a large pond for the rearing of fish, which most profitably confirmed his expectations in this respect.

Mr. John Delafield, formerly a distinguished banker in the city of New York, has on the east side of Seneca Lake, what is considered a model farm, and obtained the prize for the best conducted farm in the state of New York. He has a pond which covers about an acre of ground, artificially constructed. Good fish are propagated in it, and they supply his table once or twice a-week. These ponds can be easily constructed in many places on the north and south borders of Long Island, and with comparatively trifling expense; and we believe that our farmers, who lack neither enterprise nor the light of science, will yet give some attention to this subject.

THE LARGEST CROP OF WINE EVER MADE IN THE SOUTH.

FROM the Alabama Planter, we clip the following, which will show to what extent this branch of industry is carried on in the south:—

My crop of grapes and wine, so far as I know, are the largest ever made in our southern country, though far below that made along the Ohio, under the auspices of Mr. N. Longworth, the enterprising vintner of the west. I made upwards of 60 barrels at the Brinkleyville vineyard from my own vines, besides a number of barrels made at my presses by neighbors. Then, some considerable quantity of grapes were sold at 50 cents per gallon—the number of bushels not ascertained; though for more than two months there were constant or daily applications for grapes, and visitors at the same time partaking of and carrying away quantities. Besides these drains, on every Saturday, pic-nic parties of 50, 60 and 70 persons obtained supplies.

Now, at 50 cents per gallon, or \$4 per bushel, it is possible to realise \$2,400 from one acre, for the rate of 600 bushels per acre can be had. But even \$2,000 is enough of agricultural product, in all conscience, you will say, to realise from one acre of ground. I say possible, for except near large cities, or in the vicinity of railroad or steamboat lines convenient to large cities, hundreds of bushels cannot be disposed of. And wines at even \$1 per gallon, agreeably to Scuppernong yields, (\$3 per bushel and more,) a vast income per acre would be the result. So much so, that so soon as ascertained by a few enterprising southern men, and in due course of time, the usual competition following, a sufficiency of the best wines would probably be made in the south to supply the whole country, and thus render us independent of foreign markets for a luxury now deemed almost

indispensable. At the vineyards of Ohio, near Cincinnati, where some hundreds of acres are devoted to the grape culture, \$1 per gallon is the common price. But my prices range from \$1 to \$6, according to quality.

SIDNEY WELLER.

Brinkleyville, N. C.

SQUASH-VINE BORER.

DURING the month of August, pumpkin and squash vines are frequently found to wither suddenly, and die to the root. Sometimes the whole vine perishes, at other times, only one or more of the branches. The cause of this premature death was made known in the New-England Farmer, for August 22d, 1828. It was shown to be an insect; and the name of *Aegria cucurbitæ* was then given to it, with an account of its habits and transformations. These I now propose to describe anew, and to suggest a remedy for the disease which promises to be at least, partially, if not wholly successful.

The insect, in its larva state, is a whitish, grub-like caterpillar, which bores into the stem of the vine near the ground, and destroys the interior. The hole by which it enters is commonly near the root, and may readily be discovered by the castings of the grub around and beneath it. The insect is really a naked caterpillar, with a small brown head, a plump body tapering towards each end, six small feet near the head, and ten very short holders, or stumpy feet, in pairs, under the rest of the body. It grows to the length of an inch, or rather more, boring in the stem up and down, and sometimes into the root itself. Between the middle of August and the 1st of September, it leaves the vine, and burrows just below the surface of the ground, near the root, and there incloses itself in an oblong-oval cocoon, made of fragments of the plant and grains of earth, cemented and lined with a gummy kind of silk. Soon afterwards, having thrown off its skin, which is crowded into one end of the cocoon, it takes the chrysalis form, and remains in its cocoon, without further change, through the winter. By digging in the ground carefully, where vines have grown, and perished, the cocoons may often be found; and, in this way, numbers of the insects may be taken and destroyed in the chrysalis state.

The chrysalis resembles that of the peach-tree borer. It is nearly three quarters of an inch long, of a shining brown color, with transverse rows of minute teeth, pointing towards the tail, across the back. These little teeth enable the chrysalis to take a firm hold of the

cocoon during its exertions in breaking open the end of it. Towards the end of June or early in July, it thus perforates the cocoon, and by the help of the above-named little teeth, forces its body nearly out, when the chrysalis skin bursts open, a winged insect extricates itself therefrom, and crawls to the surface of the ground.

The body of the insect, in its winged state, is little more than half an inch long, sometimes considerably less. The head and thorax are dark olive green, and the antennæ, black. The hind body is tawny orange, with a row of four black spots upon it, and an olive-colored or blackish band at the base. The fore wings are olive green; the hind wings transparent, veined, and fringed with black. The hind legs are thickly clothed with orange-colored hairs on the outer side, with black hairs within. The wings expand about one inch and an eighth.

This little insect, which is very conspicuous for its wasp-like form, its orange-colored and black-spotted hind body, and its enormous orange and black-haired leggings, may be seen, during the month of July and fore part of August, flying at midday about squash vines, and now and then alighting close to the root, to deposit her eggs, and again taking wing and sporting in the sunshine. They can be easily taken on the wing, with a bag net, and thus many may be destroyed. In the course of a few days, having provided for her store of eggs, the female perishes, or falls a prey to her enemies. As soon as the eggs are hatched, the little grubs immediately bore into the stem of the vines, and begin their work of destruction.

It may have been observed that pumpkin and squash vines sometimes strike root at the joints, and thus establish a new connection with the soil, both to stay and to nourish them. This they do the more readily, if not too much shaken by the wind. Advantage may be taken of this fact to secure the vines from being killed by the borers. Let the vines be fastened firmly to the ground by forked sticks thrust into the earth over the principal joints, and let a little earth be drawn over each joint thus secured. They will soon take root at these places, especially if watered now and then where they are fastened. When the joints have become firmly rooted, the vines will become independent of the original roots, and will continue to thrive even when their connection therewith has been interrupted by the borer. In this way, I have saved a large vine, although the borers nearly cut off the stems from the main roots. It will

be well to examine the vines occasionally, and if any holes are found in them near the roots, carefully to lay these open by splitting the stem, and then to draw out or otherwise destroy the borers. This may be done safely, if care has been taken, beforehand, to fasten down the joints and cause them to strike root.

This insect, when it was named and described in the New-England Farmer, was supposed to be new to science, and it is confidently believed that its habits and transformations had not before been ascertained. In its winged form, however, it had been described and figured, under the name of *Melittia satyriniformis*, in Huebner's *Zuträge*, a work which has been accessible to me only within the last year. It is possible that it may be identical with the *Sphinx tibialis* of Drury, and *bombiliformis* of Cramer, which, (perhaps erroneously,) are stated to be natives of Africa. Drury's name of *tibialis*, if really intended for our insect, being the oldest, must prevail over all others. The insect is truly an *Ægeria*, a genus including also, the borers of the peach tree and of the currant bush, and several other destructive insects of similar habits.

In the course of 22 years since the publication of my first communication on the *Ægeria cucurbitæ*, I have had frequent opportunities of seeing the insect in all its stages, in my own garden. I have taken many specimens, which were in a much more perfect condition than those from which my former description was drawn, and have thus been able to make the present account far more accurate. The history of the insect is more fully detailed than in my former accounts of it; and the suggestions for protecting the vines from suffering by the depredations of the borer, are entirely new, and are the results of my experience during the last summer. On these several accounts, it is my hope that the present article may prove acceptable to you.

T. W. HARRIS.

Cambridge, Mass., Jan. 25th, 1851.

HENS IN CALIFORNIA.

REV. WALTER COLTON, the late alcalde of Monterey, finding it difficult to procure eggs when required, either for love or money, took the hen fever in the natural way; and that our friends of the Boston society may know what kind of birds they have in California, and their habits, we give Mr. Colton's own description of them:—

I purchased six hens of an Indian woman for \$6, and a rooster for 50 cents. On asking

the woman why she charged only half price for the rooster, she replied that the fellow laid no eggs, and as for his crowing that did nobody any good. Sounder reasons than these could not be furnished in a much higher place than a hen coop. The habits of these hens are a little singular. They are perfectly tame, and are as much at home in the kitchen as the cook. They never trouble themselves much about a nest, but deposit their eggs where they find it convenient; one takes the tea tray, another the ironing table, a third the oven, and there is one that always gets into the cradle. She is not at all disturbed by the tossing of the little fellow on whose premises she is intruding. Neither she nor any of her feathered sisters cackle when they leave their nest. They don't seem to think that anything worth making an ado about has come to pass. The rooster, it is true, picks up a little, and perhaps feels a feather taller. But this is the vanity of his sex. There are a great many who crow over what others have done.

COL. CHESNEY'S ACCOUNT OF THE ARABIAN HORSE.

ELSEWHERE, individuals of this species may be more showy, and even more powerful; but it is only in Arabia that the horse is found bordering on perfection. Here he is remarkable for a small head with pointed ears, peculiarly clean muscular limbs, a corresponding delicate slender shape, rather small size, and large animated eyes, expressing that intelligence which, as in the dog, is the consequence of being constantly with the members of his master's family; in fact, he generally shares their meals.

He is frequently allowed to frolic through the camp like a dog, and at other times he is picquetted at the entrance of the tent; he is exposed to the weather at all times, and compared with the treatment of his species in Europe, he is scantily fed. A meal after sunset, consisting of barley, in some parts of the country, and camel's milk in others, or a paste of dates and water, which in Nedjd is mixed with dried clover and other herbs, constitutes his usual sustenance; but, on any extraordinary exertion being required, flesh is frequently given, either raw or boiled. The Bedawins count five noble breeds of horses, all, it is understood, derived originally from Nedjd, namely, the tanyese, the manekeye, the koheyl, or koklani, the saklawye, and the julfa; of which the last and koklani are particularly prized. The julfa, a small active animal, capable of enduring great fatigue, belongs to the province of Eh'sa;

the other, which is larger, is from Yeman, or, more properly, Nedjd, and is most valued. Of the choice breeds there are many branches; there are, besides other breeds, which are considered secondary; and every mare of noble blood, if particularly swift and handsome, may give rise to a new stock. The catalogue of distinct breeds in the desert is, therefore, almost endless, and the pedigrees of individuals are varied by certificates which are handed down from father to son with infinite care; and not unfrequently they belong to more than one family, for there is often a co-partnership in mares, and hence arises the difficulty attending the purchase of one. It is, however, certain that the Arab horses deteriorate when taken elsewhere, although both sire and dam may be of first-rate breeds; by the latter, and not the former, as with us, the Arabs trace the blood. The prevailing colors are a clear bay, sorrel, white, chestnut, grey, brown, and black; but the number of horses in Arabia is comparatively few, their places, for almost every purpose in life, being supplied by camels.

NOTES FROM A KITCHEN GARDENER'S MEMORANDUM BOOK.—No. 3.

Turnips.—From the numerous varieties of this species of vegetable, I select the "early white" and "red top," as best for the table. By some, the ruta бага when about half grown is most esteemed, chiefly, however, I suspect, on account of keeping sound through the winter, which certainly is a valuable consideration with the lovers of turnips. On the 19th of April, I sowed the ruta бага, "yellow Aberdeen," "yellow stone," and "yellow Malta," with the view of ascertaining what size the larger of these varieties would attain, when having a long season to grow in; but I was disappointed. In the early part of August, they began to show signs of decay, and towards the latter part of the month, they were mostly rotten. Those left were of large size, though not larger than I have had from later sowing; but very hard, and I am convinced it is better to defer sowing until a later period. For my own part, I consider the chief value of turnips in being a secondary crop, maturing in a short season, after the ground has been occupied by a more profitable growth. For fodder, it is the least valuable of all the agricultural roots, and but little prized as a culinary vegetable. Sowing in drills, I prefer to broadcast, thinning the plants from eight to fourteen inches, according to the variety grown, keeping the rows free

from weeds by timely hoeing, leaving the larger portion of the root exposed.

Beets.—The "long smooth blood beet" I selected from the twelve varieties I this year cultivated, as best for table use, but always sow a few of the "early turnip-rooted," pink variety, with the view of having as large an assortment of early vegetables as possible. These, as well as early carrots and early turnips, I have grown between the rows of Lima beans, and before the vines shade the ground, the beets, turnips, and carrots are suitable for the table; hence a saving of ground, which especially in a small enclosure, is desirable.

For cattle, the mangold-wurtzel and white sugar beet are most profitable, which, with those mentioned, and a few "Swiss chard," for the sake of variety and their handsome appearance, are all that I intend another year to cultivate. Ground for beets as well as carrots should be deeply spaded and thoroughly pulverised. The mangold-wurtzel and sugar beet, should be thinned to the distance of 12 inches, other varieties from six to eight.

Parsnips.—This vegetable, though esteemed by many, I make but little use of; consequently, I cultivate only a small bed, chiefly for variety, and apply similar treatment as that of other tap-rooted vegetables.

Carrots.—For table use, I prefer the "early horn;" the other four varieties are valuable for fodder, but at present I am not prepared to estimate their respective merits. For bordering a kitchen garden, carrots are very desirable, appearing early in spring and continuing late in autumn, their bright and handsomely-formed leaves making a neat edging, which, in connection with their valuable roots, possesses the advantage of being both ornamental and useful.

Salsify—(*oyster plant*).—Requiring a long season to grow in, the seed should be put in the ground as early in spring as possible. To bring this plant to perfection, it should be grown in deep, rich soil, and thinned to the distance of eight inches, and kept thoroughly clean. In the absence of proper cultivation, the roots are slender, mis-shapen, and of but little value, but with attention, attain a handsome size, and are well worthy the attention necessary to be bestowed upon them. I have derived benefit during their growth by occasionally forcing the blade of an ordinary garden spade its entire length, between the rows; thus keeping the ground loose, they grow more freely, producing smoother and in all respects handsomer roots.

Scorzonera.—With us, this variety of salsify

is but little cultivated, and not generally known. In England, it is grown freely, and graces the table of the epicure. It requires similar treatment to that of the oyster plant, from which it can be readily distinguished by its more bushy growth, in consequence of which, it should be thinned to the distance of twelve inches in the roots. It produces a blackish root, the flavor of which, when cooked, is not unlike that of the oyster plant, which in form it resembles.

Skirret.—By referring to my memorandum book, in which the daily work of my garden is noted, I find that on the 11th of April, and the 3d of May, I sowed skirret, both of which failed, and being of opinion it was in consequence of defective seed, shall try it again next year, in hopes of better success. Amateur gardeners, especially, should endeavor to cultivate as large a variety of culinary vegetables as possible, and continually adding to our list of garden products. From this source, it must be admitted the most rapid advancement has been made, and to them we are indebted for much valuable information resulting from experimental culture.

Nasturtium.—As so few of the culinary vegetables are considered ornamental, I think it as well to embrace every opportunity to render attractive the appearance of the kitchen garden, and with this view, always plant in a conspicuous position, a row of nasturtiums. In addition to the beauty of the blossoms, the fruit, when pickled, is desirable, and by many esteemed superior to capers. I prefer the dwarf, as it blooms earlier and is not so troublesome as the tall-growing varieties. Plant the seed in the latter part of April, and with little attention they will continue until destroyed by frost.

LONG NAMES FOR FRUITS.

THERE is nothing more absurd or unnecessary than a long name for a fruit, or, indeed, for anything else, in this quick-moving, go-ahead age; and yet, there seems but little disposition to reform, particularly among horticulturists. It was bad enough for them in introducing new fruits among us from abroad, to attempt to preserve the long, unpronounceable foreign names, (at least, to American organs,) attached to them; but there was a sort of necessity for this, although an abbreviated translation would have been much better, in our humble judgment; and we notice that the horticulturists themselves, very justly, often ridicule the whole thing. But are they doing any better with new ones? Let us see. Here is a Frederika-Bre-

mer pear. Why *both* these long names? Was it to flatter the distinguished novelist? Why not take one name alone, either Frederika or Bremer? But we would make it still shorter, and call it the Fred, the Ika, or the Brem pear. Here, again, are some cherries. Rockport Big-arreau, Cleveland Bigarreau. Why not call them the Rock, the Port, the Cleve, or the Land cherry?

We have the same reform to ask for flowers and plants. Here is a new heliotrope just introduced, as *Souvenire de Leige Heliotropum*. "Oh my!" we are ready to exclaim, after the celebrated Miss Namby Pamby, "what a long tail our pussy cat has got!"

PLANT TREES.

A LITTLE attention, a little more thought of the morrow, a little more faith in what a day or a year may bring forth, would surround every house in the country with shady groves, and fruitful yards. Plant a vine here, and a tree there—send or go to your neighbor's orchard and clip a bud or a shoot, and insert one in every stock that does not already produce fruit. Plant trees by the fence sides; the roots will penetrate beneath them and draw sustenance from ground you cannot cultivate. Set a stout thrifty grape root, directly where the soap suds from the kitchen will be daily thrown, and in three years' time, you will have a fruit-bearing screen to hide the view of some unsightly place. I give you this timely notice, that you may not let this spring pass by without making the attempt, at least, to follow my good advice. SOLOX.

ECONOMY OF GRINDING CORN FOR FEED.

PERSONS engaged in fattening swine, it may be thought by some of our readers, would not need be told of the advantages of feeding meal instead of whole corn, even if the meal is fed without cooking. But there is nothing in nature so perverse as an ignorant farmer, who stubbornly persists in following the same old path his honest unenlightened father trod before him.

It has been often proved by actual experiment, that corn when ground and cooked, is 30 per cent. more economical for fattening pork than when fed in the usual way. A saving of 15 to 25 per cent. may be made by simply boiling the whole corn. This also would prevent servants from pilfering the pigs' allowance, and the consequent intoxication and mischief arising from the evil of feeding corn uncooked.

NEW-YORK STATE AGRICULTURAL SOCIETY.

At the annual meeting of this society, held at Albany on the 15th and 16th of January, the report of the treasurer was read and accepted, which gave the following general results:—

Receipts for the year,	\$15,316.91
Disbursements,	\$12,903.84

Balance on hand, including silver plate paid for, and premiums not yet presented,	\$2,643.07
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The following is a list of the officers elected for the ensuing year:—

President.—John Delafield, of Seneca.

Vice Presidents.—William Buel, of Monroe; Silas M. Burroughs, of Orleans; Lewis G. Morris, of Westchester; Anthon Van Bergen, of Oneida; Benjamin Enos, of Madison; Ray Tompkins, of New York.

Corresponding Secretary.—B. P. Johnson, of Albany.

Treasurer.—Luther Tucker, of Albany.

Executive Committee.—Ambros Stevens, John B. Burnett, M. G. Warner, Josiah W. Bissell, Benjamin B. Kirtland.

The Next Annual Fair.—The committee recommended Rochester, as the place for holding the next fair.

GRAFTING.

The following is one of the most usual modes of propagating many plants and trees, particularly where the stock is larger than the scion:—

The stock is prepared as indicated by fig. 18. The lower part of the scion, A, should be made thin by slicing off a portion from each side, and forming a small shoulder at the top of the slope, as near as possible to which there should be an eye; the side of the scion on which the bark is left, should be broader and longer than the opposite side, by one fourth, or frequently by one third, or more, according as the stocks are large or small. For the latter, the inside of the scion should be cut very thin, with a short slope; and when intended for large stocks, the same side should be left fuller, so that the scions may better resist the pressure to which they may be subjected when they are introduced into the cleft. They usually have two eyes to the scion, but the second is often superfluous; for the one nearest the small shoulder has an immense advantage in this respect, that when the scion is introduced, as is represented at B, it is close to the top of the stock, and as soon as it begins to grow, it forms a basis on the latter, and thus co-operates in healing over the wound of the

stock. This position of the lower bud ought to be attended to in all modes of grafting.

The scion, such as it is represented, should be introduced in the cleft prepared as follows:—By means of a strong knife. The first of these should be placed across the transverse section of the stock, and driven into the latter in such a manner as to split the bark before the wood; and always taking care that the cleft extend but little, if at all, to the bark on the opposite side, at the lower part of the slope; and on the other side, where the scion is to be inserted, it ought to be, at first, shorter than the wedge-shaped portion of the graft. This being done, the in-

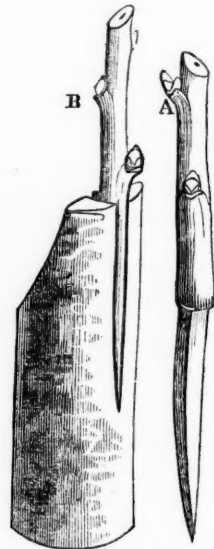


FIG. 18.

strument is quickly raised by one or more strokes, thus avoiding any kind of twisting; then the wedge-shaped beak, at the end of the handle of the cleaver, is introduced slightly into the cleft, so as to keep it sufficiently open for the introduction of all the wedge part of the scion; and this should be done in such a manner that the liber, or inner bark of the stock, may correspond as nearly as possible with that of the scion. But as we cannot always judge when this is exactly the case, it is better that the liber of the scion should be slightly outside of that of the stock rather than that it should be placed in contact with the young wood.

The graft being properly placed, we cover the wound with a mixture of equal parts of fresh loam and cow dung; but it is better to do over

the parts with the resinous composition adapted for covering the large wounds of fruit trees and others. This consists of Burgundy pitch, four parts; black pitch, yellow resin, and beeswax, of each, one part. This composition ought to be applied more especially on the eye of the scion next the top of the stock, in order to secure it against insects and the bad weather, which may supervene. Afterwards, there need not be any uneasiness on account of this coating; when the sap is put in motion, the resin liquifies sufficiently for permitting the growing shoot to pass freely through it.—*Gardeners' Chronicle*.

MUSTARD.

THERE are two species of mustard raised in the United States; the white, (*Sinapis alba*), fig. 19, which is most usually cultivated as a forage plant; and the black, (*S. nigra*), fig. 19½, generally raised for the seed. It requires a rich, loamy soil, deeply plowed, and well harrowed.



FIG. 19.



FIG. 19½

It may be sown either broadcast, in drills about two feet apart, or in hills. Mr. Parmelee, of Ohio, thus raised on 27 acres, 23,850 lbs., which brought in the Philadelphia market, \$2,908, an average of over \$100 per acre. The ground on which it is planted must be frequently stirred, and kept clear of weeds. When matured, it should be carefully cut with the scythe or sickle, and if so ripe as to shell, laid into a wagon box with tight canvas over the bottom and sides, so as prevent waste. As soon as it is perfectly dry, it may be threshed and cleaned, when it is ready for market.

The white mustard is a valuable crop as green food for cattle or sheep, or for plowing in as a fertiliser. For feeding, the white is much preferred to the black, as the seed of the latter is so tenacious of life, as to be eradicated with difficulty when once in the ground. The amount

of seed required per acre is from eight to twenty quarts, according to the kind and quality of the land, and the mode of planting or sowing. It may be sown from early spring till August, for the northern and middle states, and till the latter part of September for the southern. The crops yield from 25 to 30 bushels per acre. Both are excellent fertilisers for the soil.—*American Farm Book*.

MANUAL-LABOR SCHOOL OF AGRICULTURE FOR THE JEWS IN THE HOLY LAND.

WE had the pleasure a few days since of selecting and forwarding some agricultural implements for the above institution, recently established at Jerusalem. The school was commenced, and has hitherto been sustained and directed solely by John Meshullam, a converted Jew. The man and the object have not before been brought to our notice; but the case is so full of novelty and interest, to the intelligent and religious public of the United States, that we venture briefly to notice its existence.

Mr. Meshullam, its founder, was the son of a wealthy Jew, of London. He commenced a banking business in Genoa, Italy, where he married the daughter of a rich banker. The intelligent expositions of the Rev. Mr. Wolf, and some other kindred spirits with whom he became acquainted, effectually weaned him from Judaism. He sought and found a purer faith among the long-reviled gentiles. The usual consequence immediately followed—disinheritance by his family and persecution from his bigot race. After years of exertion, trial, and disaster, the result of the evil influences brought to bear upon him, he sought the land of his ancestors and made their ancient capital his abiding place. There he has planted himself, with his wife and children, devoted to the welfare and regeneration of his kindred and race.

Mr. Meshullam has leased a few acres of ground in a fruitful valley, adjoining the pool of Solomon, some ten miles from Jerusalem, between Bethlehem, the city of David, and Hebron, the city of Abraham. Here, he has, to a certain extent, adopted the European system of cultivation, and introduced some of the products indigenous to America—potatoes and Indian corn are among his staple products. His first crop of the former, raised as an experiment, and on a limited scale, yielded him an ample supply for his family, and left him a profit of \$250 for the surplus.

During the rainy season, so propitious is the climate, that two crops can be raised. By the aid

of Solomon's pools, which furnish a copious supply of water throughout the year, fine crops are obtained, including all varieties of fruit, peculiar to that warm climate. Grapes, figs, pomegranates, dates, olives, cucumbers, melons, &c., are raised in profusion. We understand some accessions to this new and praiseworthy enterprise are determined on, and that a small band of enterprising Americans are already organised, and expect to sail for Palestine the present season. We trust this new wave of our countrymen will push eastward, till it meets the booming tide now rapidly extending westward, and that they will meet in India to congratulate each other on a renovated world.

By a late firman, of the sultan, the occupancy, and even the ownership of the Moslem domains, is thrown open to all nations; and our straightened countrymen, who have quite lately found themselves hemmed in between the Atlantic and Pacific, or at least, for the present, and until a further annexation in Canada, Mexico, or Kamtchatka, will open a little further range for their active spirits, can now commence operations in Palestine—reclaiming the land, introducing pure Christianity, with its attendant blessings, and carrying forward the great career of physical, intellectual, and moral improvement.

Any donations of money, seeds, or implements, destined for the Manual-Labor School of the Holy Land, left with us, will be forwarded to their destination.

FORBES SHANGHAES.

A CORRESPONDENT of your paper has hit off the late poultry exhibition, at this place, in a somewhat humorous vein. His caricature of the "red Shanghae fowl is capital; the hat is his, and I hope he will wear it, broad brim and all, with becoming dignity. Any one having an eye for fun must enjoy it with a zest.

The writer, however, is mistaken in regard to the Shanghae fowls, as market poultry, and I only desire to set the matter on a proper footing, in order that the farmer, whose interests I have at heart, may breed that fowl which shall give him the best return for his investment. I, for one, cannot agree with him in regard to the Jersey blues, and having had no little experience with that breed, do not hesitate to pronounce the Shanghaes superior to them, either as layers, or for market. In fact, there are few better layers than the Shanghaes, both in summer and in winter.

Col. Brockett, of Newton, Massachusetts, has

the original importation of the Forbes stock. A few days since, he killed a pullet, which, when dressed for market, (divested of head, legs, toe nails and all,) weighed $8\frac{1}{2}$ lbs. He also dressed, in like manner, two pullets, six months old, which weighed $12\frac{1}{2}$ lbs. the pair. The flesh and all the meaty portion was plump and full as you could desire for the table.

Col. Brockett, through his friend, Mr. Pedder, will forward to you by Adams & Co., a pullet, which, when you have exhibited to the satisfaction of your friends who may chance to drop in, you can pluck and dress; after that, you can report through your journal. It would be well to kill and dress the fowl some four or five days previous to cooking.

Perhaps you may think me somewhat interested in the red Shanghae fowls; but I will declare to you, that I am not the owner of one of them. E. W.

Dedham, Mass., Feb., 1851.

CURIOUS FACTS IN VEGETABLE PHYSIOLOGY.

I WAS told at Tallahassee, Florida, that beets would not grow seed, top onions would not grow the bottoms, and black seed would not produce bulbs. Cabbage will produce seed, but that seed will not generally produce heads, but grow into long stalks with a few loose leaves on top. I have seen such stalks six feet long.

Corn from the north, though hard and flinty, when planted here, grows light and chaffy. Oats grow lighter and lighter, until they run out. On the contrary, cotton, which is here a hard woody stalk, would grow more like buckwheat in New York.

The Palma Christi has been grown here for shade trees; and tobacco was found as a wild plant all over the country, when first settled by the whites. A little further down the peninsula, sweet potatoes and arrow root are now growing wild; and so are pumpkins, and several other plants which are only grown with great care at the north. We live in a great country, as yet but little known. SOLOMON ROBINSON.

TO KILL COCKROACHES.—Mix equal quantities of red lead and Indian meal with molasses, making it about the consistency of paste. It is known to be a certain exterminator of roaches. A friend who was troubled with thousands upon thousands of them, rid his house of them in a very few nights by this mixture. Put it upon plates and set it where the vermin are thickest, and they will soon help themselves. Be careful not to have any article of food near by where you set the mixture.

REVIEW OF THE FEBRUARY NUMBER OF THE AGRICULTURIST.

As this is a short month of short days, let us make short work of it.

A Great Milker.—Truly a great account, and I have no doubt true. I wish all strippers in pint cups could read and realise its truth. But I suppose this cow had something to eat besides stone walls, rail fences, thistles, briars, elder bushes, toad flax, and daisies, which seem to me the most prominent features in some pastures.

Substitute for an Ice House.—I venture to say that some cute fellow might cut out this item and sell it as a great secret, for much more than you charge for a thousand equally valuable ones to your readers.

Cure for a Belloused Horse.—Just as intelligible as half the recipes published—all wind.

Chain Gates.—A new idea, which I like very much. Will some of the universal nation go to work at it, and give us cheap chain gates?

Village Lectures.—What a fund of valuable information is contained in these articles. To prevent the effects of decomposition, so deleterious to health, let the farmer not abandon the process of making manures, lest it cause sickness upon the premises. But let him study how to counteract the effect by adding charcoal, if he has it, and gypsum, to absorb the escaping ammonia, by which many a dung heap is rendered almost worthless during the process of decomposition, and the vegetable fibre almost as effectually burnt up as though it had passed through the fire, and left nothing but the ashes, while the great fertilising principle had passed off in the form of smoke, and become lost to the husbandman, and poisoned the atmosphere that his family were daily compelled to breathe. But to know this, the farmer must read; to read anything connected with farming, is to subject himself to the ridicule of the biggoted who are anxious that none should possess any more information than themselves. This difficulty will never be overcome before agricultural chemistry is taught in common schools, by teachers of common sense.

Notes from a Kitchen Gardener's Memorandum Book.—Here is one of the very kind of teachers required. He talks about the reason why different kinds of manures are beneficial to different plants. How did he obtain the knowledge? Was it instinctive, or has he come by it by study, by experiment, and careful observation? If so, then why should not all who can read profit by his experience? It is a lamentable truth that most of us are not only excessively ignorant,

but excessively fond of the article. It is surprising to hear what a vast number of excuses some people can invent to satisfy their consciences for refusing to buy a book, or subscribe for a journal devoted to the object of giving them knowledge of the pursuits of their lives.

Ventilation.—I am glad to see this important subject touched upon in your columns. It is one which requires the united efforts of all thinking men to combat. In my opinion, the want of ventilation causes more sickness in families than any other household arrangement. How much it is neglected in stables, barns, and granaries, as well as in dwellings.

Value of Dogs.—Horrible! But this is only one item in ten thousand. Yet, if half the world were to die with the hydrophobia, the other half would keep dogs.

The Princess Tribe of Shorthorns.—Another bull fight, of no interest whatever to one reader in a hundred, and will not be read by one in ten. You cannot take a more sure way to lessen the public estimation of the Agriculturist, than by these personal disputes about nothing. [We totally disagree with the "Captain" in the above conclusion.—Eds.]

The Hen Fever.—This article, or rather the illustration accompanying it, burst so suddenly upon my organ of the ludicrous, as I sat alone in the library, that I went off into a perfect guffaw of laughter. This brought the girls all in a bunch from the parlor, to see "what in the world ails father." I could only tell them I had got the "hen fever," and that set them in a twitter, and this altogether brought Old Black Joe up from the kitchen, to see what had broke loose on deck; and the whole made up a show pretty nigh equal to the "great poultry sight" at Boston, which I have just been reading about.

"Wal," says Joe, when made to comprehend the subject. "Dat Boston are a cute place, and dem Yankees always ready for spec'lation. If de Cap'n knows half so well how to handle big roosters as him do big ship, could be sittin' on de fence now crowing over fortune made by de hen business. 'Cause, spose we had bought dem big roosters used to see in China, and sell him here for sich price dat you read about—r'aly, I should like to go in de hen trade myself."

Effects of Irrigation.—Things talked of, but seldom practised.

Salt for Cattle and Sheep.—As it is a matter of no consequence with some stories which end you begin at, I will commence upon the last part of this salty article. I hope it will be con-

ceded that I know something about salt water, whether I do or not about the necessity of salting bipeds and quadrupeds. But beginning where your correspondent left off, I shall dispute the point upon which he closes his article. It is not a "mooted question, whether salt is necessary to man or beast." The argument adduced by Mr. R. is sufficient for a reasonable man, but here is another anchor to windward. In Prescott's Mexico, it is mentioned that the Tlascalans, during a war of more than 50 years with the Aztecs, were confined to the products of their own territory, and in all that time made no use of salt; until the taste of the people had become so accustomed to its disuse by long abstinence, that it required several generations after the conquest, to reconcile them to the use of salt at their meals. Evidence of a similar kind could be furnished to almost any extent, to prove that salt is not a necessary of life or health, any more than tea, coffee, pepper, spice, and spirituous liquors, all of which are stimulants to the appetite, or excitors of the passions—very evil ones, too, sometimes. No degeneracy can be attributed to the Tlascalans, in consequence of their not using salt; for at the time Cortez appeared among them, they were the bravest and hardiest race in Mexico.

A Junt in Ohio.—I cannot follow the writer in all his wanderings—I must only stop at a few points as he whirls along a railroad, tiresome for its directness. Although Ohio has now become an old state in comparison with several others, yet it seems as though a great portion of the surface of its rich soil is still covered with the original forest, wasting its riches upon the desert air.

Osage-Orange Hedges you say "may make a substantial enclosure." So it may—will it? [Yes, it does, and will.—Eds.]

Wasting Manure.—You speak of the way the manure from the distilleries and pig pens is sent into the river as a great want of economy. It is not of the least importance. If they retain the hogs and whisky, what on earth more than that can the people want?

Ladies' Department.—My daughters, as well as a great many other daughters, always look to this page for something new and interesting in domestic economy—things that may be relied upon not only as useful, but correct.

Foreign Agricultural News.—This page is unusually rich this month. Do not fail to refer to it when your horse has the colic.

Phosphate of Lime.—This article which is noticed in the Editors' Table as lately discovered

on Lake Champlain, undoubtedly contains an error in the figures—92 per cent. is quite too high. [We have the best authority for making this statement, namely, that of the gentleman, (and he is a good chemist,) who analysed it.—Eds.] If it is half that, it is valuable. REVIEWER.

WHEAT GROWING IN THE WEST.

As your paper is a national one, perhaps some of your readers may be interested in a brief statement of the system of wheat growing in this part of the west, and its actual and probable effects upon the soil and the purse.

It was a very natural and obvious move on the part of the first settlers of the west to engage in raising wheat. Possessing a soil rich in the organic and inorganic elements of that noble cereal, and generally having but a small amount of capital remaining, after paying for their farms, they adopted at once, that course of husbandry which would yield the readiest returns for the capital and labor bestowed. But a most wretchedly destructive feature was given to our early farming, which is ignorantly persisted in at the present time, to a great extent. It consists in what is called "stubbling in;" that is, as soon as the grain is removed, and the hogs have gleaned the fields of the scattering heads, plows and teams are put in, and the stubble turned under; and this, at the proper, or improper season is again sowed with wheat. It must be sowed. If it cannot be sowed early, it must be sowed late, even if the snow flies. You will agree with me, Messrs. Editors, that this is a most baneful practice.

Another practice is to summer fallow, or plant with Indian corn, and sow with wheat, each alternate year. This practice, although not so deleterious to our soils as the former, is highly pernicious, and should never be practised without a liberal application of manure. The effects of these iniquitous practices are becoming year after year more apparent. Our farmers are cramped; they have depended on the wheat crop, and that has failed; the poor little insect has to bear all the blame, when in fact, I believe the more effective cause, is to be found in mean, yes, *mean* cultivation, and a broken-down soil, a soil deprived or robbed of its essential elements of cereal constitution. We are almost certain of a good crop when we have a piece of "new breaking" to put in with wheat.

But a small portion of the farmers in this part of the west have yet introduced the cultivated grasses. Marshes abound, from which is

obtained a tolerable article of hay. The effects of the palpable neglect to adopt an alternating system, and bring into use, the grasses, will, I fear, have to be endured, to some extent, by the third and fourth generations.

But, thanks to the agricultural press generally; its improvement is working its way into the rustic cabin of the western settler; and in justice to the western farmer, it must be said, that as sure as he reads, he awakes to effort, and casts about for a better system, and as far as his means will permit, he launches into schemes for improvement.

Clover does nobly on all our western openings by the application of a little gypsum. This is to be obtained, mostly, at Granite Rapids, in this state, where it is worth \$1 per barrel. It costs us, adding purchase price, \$2.50, and \$3 to get it here. It appears to me that our eastern friends might make money by sending plaster into Southern Michigan, and Northern Indiana. There is an increasing demand for it.

Were it not that it would extend this article to an inadmissible length, I would write a few words about the drill method of sowing wheat. I think that will soon, to a great extent, supersede the broadcast method. But I will close by inquiring the price of your wheat drills, (as I suppose you have them,) and also whether you can send implements with safety, to Hillsdale, the western terminus of the Southern Railroad, or to some point on the Central Railroad.

CHARLES BETTS.

Burr-Oak Farm, Mich.

The price of our wheat drill is \$100. It is made in a superior manner, sows seven drills at a time, and is worked by one horse. Implements and seeds of any kind can be shipped as desired by our correspondent, we presume, and go through with entire safety.

BURNING GAS FOR FUEL.

An apparatus, which the inventor calls the *atmopyore*, is noticed with commendation in the London Lancet. The principle of the invention really consists in burning the oxygen of the atmosphere, by a small outlay of gas, so as to produce an intense heat, applicable for heating apartments or raising steam. The consumption of two cubic feet of gas raised the temperature of a room, the cubic contents of which was 8,557 feet, five degrees of Fahrenheit in seventeen minutes. Twenty-five feet per hour of gas burnt in the atmosphere produced steam sufficient for a one-horse-power engine. The heat

engendered by burning gas in this way is increased one hundred per cent. over the same quantity burnt in the ordinary way.

THE THOROUGH-BRED HORSE.

THE horse, from the earliest ages to the present day, has been universally regarded as an animal of the highest interest and importance to man. In the Scriptures, in history, in romance, and poetry, he occupies many a glowing page, and no felicity, or elaboration of thought or language is spared to illustrate and portray his usefulness and beauty. As our servant, companion, friend, and protector, most of our necessities, comforts, and amusements are more or less dependent upon him. Without him, the severe battles of the Canaanites could not have been maintained; nor could the holy expeditions of the Crusades have been carried on. Much of the renown of Alexander is identified with his favorite Bucephalus; and the glory won by King Richard at Bostworth Field would, without his gallant White Surrey, have been less brilliant. Tamarlane, deprived of his Arabian cavalry, never could have subjugated Persia, India, and Syria; nor could Suwarrow, without his noble Barbs, have won such undying fame by his victories in Poland, Italy, and Turkey. Joan of Arc, divested of her dashing courser, would probably never have astonished the world with her martial deeds; nor could Bonaparte, without his well-trained cavalry, have achieved his dazzling triumphs at Austerlitz, Jena, and Lodi. Wellington, shorn at Waterloo of his dragoons, could not have added so much lustre to his fame; nor could our own immortal Washington, without his equestrian auxiliaries, have given peace and freedom to his country. The farmer, deprived of his faithful horse, could make but little progress in husbandry; and the sportsman and gentleman of leisure would suffer many an abridgment of their pleasures, did not their prancing steeds impatiently wait a summons to be mounted. The tournaments, so vividly described by Sir Walter Scott in his imperishable novels, would have been dull and insipid divested of the share which the high-mettled horses bore therein; and Diana Vernon would certainly have appeared less lovely, had we not seen her in the fox chase so gracefully bounding through bushes on her beautiful "jet-black Phœbe." *Painting* would have been shorn of one of its happiest triumphs, had not the noble charger of Washington occupied the foreground of Trumbull's admirable representation of "Crossing the Delaware;" and *Poetry* would

have lost some of its most attractive charms, had not Homer sung the praises of Achilles' coursers, and Byron made the wild steed of Mazaepa a theme for his enchanting muse. The classic reader cannot forget that beautiful passage in the Iliad, wherein the ancient bard represents the horses of Achilles as actually weeping for his death.

"Meantime, at distance from the scene of blood,
The pensive steeds of great Achilles stood;
Their godlike master slain before their eyes,
They wept, and shar'd in human miseries.
In vain Automedon now shakes the rein,
Now plies the lash, and soothes and threats in vain;
Nor to the flight nor Hellespont they go,
Restive they stood, and obstinate in woe."

Great Jove is then represented as taking pity at their distress, and thus addressing them:

"Unhappy coursers of immortal strain!
Exempt from age, and deathless now in vain;
Did we your race on mortal man bestow,
Only, alas! to share in mortal woe?
Ourselves will swiftness to your nerves impart,
Ourselves with rising spirits swell your heart.
Automedon your rapid flight shall bear
Safe to the navy through the storm of war.
He said: and, breathing in the immortal horse
Excessive spirit, urg'd them to the course;
From their high manes they shake the dust and bear
The kindling chariot through the parted war."

Since, then, it is apparent that the horse is essential to our protection, comforts, necessities, or amusements, in almost every step of our progress through life, it is certainly of the highest importance that he should be rendered as serviceable, valuable, and perfect as possible. This can only be accomplished by the strictest attention to the improvement of his breed. A trial of speed effectually tests his durability, activity, and soundness, while, at the same time, it affords a most agreeable, innocent, and exciting recreation or amusement. A horse, that can well acquit himself in a race of four miles, proves that his bones, sinews, muscles, lungs, and windpipe are sound, well proportioned, and entirely capable of performing their proper functions in the best manner. If any defect exist, the severe exercise of so long and so rapid a race would quickly bring it to view. It is not unusual for a fine horse, in a race of four-mile heats, to run twelve or sixteen miles. Such a trial, therefore, clearly establishes his strength, activity, soundness, and endurance—and from such a horse, it would be manifestly safe and prudent to breed. His produce would unquestionably be much more likely to excel in those essential qualities than the produce of a common cold-blooded horse. Therefore, by being always careful to breed from no other stock

than such as have been well tried in the manner designated, you will be sure of having very superior horses, whilst the expense of keeping a good one is no greater than that of keeping a bad one.

The offspring of the high-bred, warm-blooded horse is in many respects greatly superior to, and more valuable, than the stock of the common cold-blooded horse.

1st. They are more intelligent, and their dispositions more kind and tractable.

2. They are less liable to disease, and their carriage and appearance more elegant and showy.

3. They are more active, and stand the heat much better. A fine-blooded horse can travel long distances rapidly in the hottest weather, when probably a common one would fall dead under the same exercise.

4. They live to a much greater age. A common cold-blooded horse rarely lives, (to be of any service,) beyond 15 or 16 years; but a high-bred warm-blooded one is serviceable at 30. The sire of the celebrated racer Sir Archy was 39 years old before the latter was foaled.

5. Their superior fleetness, durability, and bravery render them much more efficient for cavalry and expresses.

6. They will always command a higher price in market.

These excellent qualities, of course, render them in all respects more valuable, and conclusively prove that every person in the community has a deep interest in extending, cultivating, and improving the fine-blooded breeds.—*Sportsman*.

DIFFERENT KINDS OF FOOD FOR SOILING.

1st. *Wheat and Rye*.—The earliest food which can be depended upon in the spring, for soiling, is wheat or rye. We much prefer the former, as it is sweeter and more nutritious; nor does the straw become tough and harsh so soon as rye; it consequently lasts longer.

Cultivation.—If the ground be not already rich, it should be made so. It cannot be made too rich for this purpose. Plow deep, harrow fine, and then roll. Now take an extra quantity of seed, and sow broadcast, as early as the last of August or first week in September. Plow this in about three inches deep with a three-furrow plow; leave the land in its rough state, without harrowing or rolling. By using an extra quantity of seed, the stalks grow finer, sweeter, and more tender; and by leaving the land rough, the plant is not so likely to winter-kill.

Plowing in the seed has a further advantage; the plant strikes a deeper root, and consequently grows stronger than if lightly harrowed in; it also comes up in rows, as if drilled, which gives the air a much better opportunity to circulate among the stalks; thus promoting a more rapid and better growth. However rank the grain may grow in the fall, it is not advisable to feed it off in the slightest degree, except in a southern climate. North, the grain requires all of its fall growth to protect it during the winter, and insure a vigorous and rapid start in the spring.

2d. *Orchard Grass, Lucern, Ray Grass, and Clover.*—These grasses come forward first in spring in the order mentioned, although they ripen for hay about the same time. In a very early season, we have had orchard grass in a dry, warm, rich soil, two feet high, and fit for soiling in the latitude of 40° 30', by the last of April; it however cannot generally be depended upon in this latitude before the last of May.

Cultivation.—For orchard and ray grass the land must be rich, clean, and well pulverised. Sow each kind by itself, at the rate of at least two bushels of seed per acre, early in the fall or spring, then harrow and roll. Neither clover nor other seed should be sown with these grasses; and it is important that the seed be sown thick; otherwise it will come up in tufts, and in a few years be almost entirely rooted out by other grasses. The yield is very large when properly cultivated. We have taken upwards of three tons per acre of well-cured hay of the former. For hay, neither of these grasses is quite so good as Timothy, herdsgrass, or red top. This ray grass must not be confounded with rye grass nor oat grass. It is much superior to either, and makes the finest and best of lawns for our country. It is now in great request in this vicinity for the purpose of soiling.

Clover should be sown the last of February, or early in March, just after a fall of snow, if possible, at the rate of ten to sixteen pounds of seed per acre, at least. Whenever there is frost upon it, especially in the spring, not a hoof should be allowed to cross nor nibble it till the sun has dried off the frost. We have seen a small flock of sheep ruin a whole field in a single hour, by pasturing it on a frosty spring morning.

The cultivation of lucern is attended with too much trouble to find favor at the present high price of labor in the United States. It requires a very rich, deep, dry, warm soil, prepared in the best manner. Sow fifteen to twenty pounds of seed per acre, in drills, nine to eighteen

inches apart, the last of April or first of May, in this climate. Hoe it well during the summer, and keep it clear of weeds; otherwise they will check its growth, or almost entirely kill it. The following year, it may be cut several times during the season of its growth. After each cutting, liquid manure, or a light rich compost should be spread over it.

Indian Corn.—By sowing the earlier varieties for the first sowings, this may be had from the fore part of July till late in November. The proper time for cutting corn for soiling, is when the ear is well set on the stalk, and the grain is in milk. If cut before this, it is apt to scour the stock, and it is not so nutritious for them.

Cultivation.—Plow very deep—subsoil if possible—you cannot make the land too rich. Sow the earlier varieties, in drills from twelve to eighteen inches apart; the later, from eighteen to thirty inches; keep the ground clear of weeds, either by the hand cultivator or hoes. To sow in drills is far better than broadcast, as the air then circulates freely among the stalks, and makes a much healthier and better growth. The varieties of sweet corn are decidedly superior for soiling, as the stalks are sweeter, and more nutritious. Not so great a growth of stalks, perhaps, can be got per acre; but the superior quality of the stalks and ears more than compensates for the deficiency in quantity.

Millet.—Prepare the ground as for orchard grass, and sow broadcast, or in drills, six inches apart, from last of April to the first of July. It may be harrowed, or plowed in like wheat, only not so deep by one inch. It should be cut for soiling when the stalks are in flower, or just as going out of flower.

Oats and Buckwheat.—Sow and cultivate the same as millet.

There are other grains and grasses which may be profitably cultivated for soiling, but the above are the most important.

Of pumpkins, cymilins, squashes, sugar beets, and other roots which ripen in the fall, we shall not at present speak, as it would make this article too long.

Treatment of Stock under the Soiling System.—

Stock, when soiled, should have a free range of a few acres at least, in a well-shaded, and if possible, well-watered pasture. Exercise in the open air, the greater part of the day, is absolutely essential to their good health and thrift. Their food may be thrown in small bundles on the clean grass ground; but a better manner for feeding is, to place the food in common hay ricks, standing on legs two or three feet from

the ground. There is much less waste by adopting this method. If fed in stalks, the corn stalks should be cut up fine before feeding, in a machine made expressly for this purpose. Every particle of them will then be consumed with avidity.

Green food should always be given fresh cut; if allowed to lie a few hours, and become half wilted, it is very injurious to stock, often causing disease, and sometimes death. Be very careful not to feed too much at a time, otherwise it may produce hoven. If soiled entirely, stock ought to be fed five times a-day. We hope our readers will keep these hints in special remembrance.

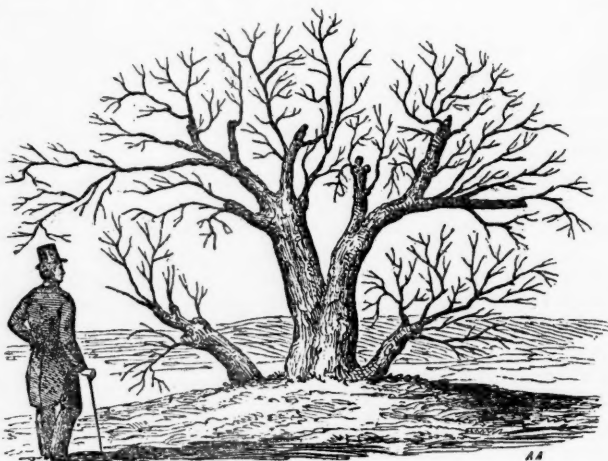
THE ENDICOTT PEAR TREE.

TRADITION connects the planting of the Endicott Pear Tree and the foundation of Salem, with the same date, 1628. Historical evidence renders it certain that the existence of the tree could not have been so early as the origin of the first town of Massachusetts.

The late reverend and learned Doct. Wm. Bently, "desirous," in his own words, "to honor the man who, above all others, deserves the name of the father of New England," addressed three letters to President John Adams, in relation to the antiquity of the survivor of the orchard of Gov. John Endicott. These manuscripts are preserved in the archives of the Massachusetts Historical Society, and have been kindly communicated by Rev. Doct. Thaddeus M. Harris.

Doct. Bently, in his letter, dated October, 10th, 1809, writes thus: "The tree is near the site of the first mansion of the governor, and the land and tree always have been, and now, (1809,) are, the property of his direct heirs, being in the possession of Mr. John Endicott, nearly fourscore years of age and of the sixth generation. To ascertain its age, near it stood a dial, which was fixed upon a pedestal, which, the governor said, bore the age of the tree. That dial has been for years in my possession. It is in copper, square, horizontal, three inches, a very fair impression, and in the highest order. It was marked William Boyer, London, clock-maker, fecit, I. 1630, E., the initials of the governor's name."

"This 'Old Pear Tree' is situated on the southern side of a gentle slope of land, and sheltered by it, in some measure, from the piercing north winds, in what was once the garden of Governor Endicott. The surrounding soil is a light loam, with a substratum of clay. Its appearance at this time is rather dwarfish, being only 18 feet high, and 55 feet in circumference of its branches. The trunk exhibits all the marks of extreme old age, being entirely hollow, and mostly open on the south side, with just sufficient bark to convey sap to its branches. It is seven feet, four inches in circumference near the roots, and is divided into three parts, two of which are connected to the height of 18 inches. The other is entirely distinct, from the ground upwards."



THE ENDICOTT PEAR TREE.—FIG. 20.

No doubt the dilapidated condition of the trunk is owing, in a measure, to the want of care during the most part of the first two centuries of its existence, being situated in an open field, without any protection, and often browsed by cattle and injured by storms. This patriarch within the last forty years has often suffered from easterly and southerly gales. In October, 1804, it was nearly prostrated, being shorn of all its branches, and its trunk split and divided in the manner before spoken of. In the heavy gale of September, 1815, it was again doomed to a similar fate; almost all its limbs at that time, were either split or broken, and it appeared doubtful for some time, if it would ever recover; but such was the wonderful tenacity of life that it rose again, phoenix like, as it were, from its very ashes. It continues to produce fruit yearly, the average being about two bushels.—*Trans. American Institute.*

PRIZE MERINO SHEEP.

THE annexed group was taken from life by C. Mayr, artist, at the exhibition of the American Institute, at Madison Cottage, in the city of New York, October 11th, 1849; delineating Me-

rinus belonging to Messrs. Cullen and George W. Capeheart, Esqrs., of Merry Hill, North Carolina. To them was awarded a silver cup, for the best pen of fine-wooled ewes; and a diploma, for the second best fine-wooled buck.

PAULAR MERINO SHEEP.—FIG. 21.
The property of George W. and Cullen Capeheart, Merry Hills, N. C.



These sheep were bred and forwarded by S. W. Jewett, Esq., of Vermont, got by his premium buck, Fortune. They are distinguished for yielding very heavy fleeces of fine wool; the ewes annually yield over five pounds, and the

rams over ten, of well-cleansed wool. They are also noted for being very docile and hardy, possessing very strong constitutions, and are able to thrive upon very scanty keep. The ewes are good nurses, and the lambs are easily reared,

because they drop strong, and are protected from cold and wet by a thick covering or coating of soft hair and fur, which in a few months is shed, and replaced by a thick pelt of rich, soft, oily wool, remarkably compact, covering the whole body; a natural clothing, sure to protect them in severe weather.

This breed of sheep are also distinguished for having loose, heavy, folded skins, particularly about the neck, in the form of a ruffle, giving them a bold and lofty appearance, with some folds upon the ribs, and a wide-set tail at the rump. In the Patent-Office Report for 1847, may be found an able letter from Charles L. Fleischman, Esq., accompanied with cuts representing the best breeds of sheep in Germany. On page 268, Mr. Fleischman says: "Twenty years ago, bucks with a smooth, tight skin, which had extremely fine wool, were considered the best; but their fleeces were light in weight, and had a tendency to run into twist. The German Merino wool grower had to come back to the original form of rams, with a loose skin, many folds, and heavy fleeces; and since then, they have succeeded in uniting with a great quantity of wool, a high degree of fineness. This kind of heavy-folded animals, rams, and ewes, are now considered the best for breeding and wool bearing.

"The Spaniards kill all those lambs which are born with few folds and fine short hair, or almost naked; because, experience has taught them that the offspring of such animals bear a fine wool, but produce, by degrees, animals with flabby, light fleeces, which gradually lose the folds, and become thinner and thinner in fleece; and are consequently less advantageous to the wool grower than those sheep which are produced from lambs of plenty of folds, and a thick cover of fine, soft hair."—*Transactions of the American Institute.*

WIRE FENCE FOR FOREST LANDS.

As we are so frequently called upon, personally, for knowledge on this subject, we will here give, for general information, the manner in which wire fence is frequently made in the forest lands, in this vicinity.

In order to make a strong fence, it requires three strands of wire. No. 9 is used for the lower strand, and is placed from one to two feet from the ground. No. 8 is used for the middle, and is placed from one foot to eighteen inches above the first. No. 7 is used for the upper strand, and is placed the same distance above the second, as that is from the first. If

cattle are very unruly, it may be advisable to use larger wire; but anything smaller is too light for this purpose.

The best way of fastening the wire, is to bore a half or three-quarter inch hole through the centre of small trees, from three to six inches in diameter, and run the wire through these; otherwise, drive small staples made of the best wrought iron into the trees. The objection to iron staples is, that where the wire rests upon them, it corrodes much more rapidly than if resting on wood. These trees should be about ten feet apart; further than this, the stock is much more likely to get their heads through the wire and injure the fence.

Wire fence is found to be quite as efficient against unruly stock, as the best rails; in fact, in many instances, more so, for they cannot tear it down as they will rails, nor can they easily break it. Generally, they seem afraid of it, and the moment the wire touches any part of the body, they immediately withdraw from it.

Wire fence gives the country a much more beautiful appearance; for it cannot be seen a great distance off, and thus the landscape appears like an immense park interspersed with cultivated fields of diversified crops. Walls are often necessary to use up the stone lying on the land; but rail fences are only a needless expense, and are odious to the eye of every lover of a fine landscape. We detest them in every shape and form, and shall rejoice to see the day when not one can be found in existence; but that time will not come till the farmers of this country get more refined in their notions, and have the moral firmness to study their interests better than they now do, and *compel all loafers* to take care of their own stock, instead of turning them out into the highways to be supported by others.

DISCOVERY OF A NEW FIBROUS PLANT.—Our esteemed friend, Col. Maunsel White, of New Orleans, informs the editor of the Delta, that the okra plant, which grows freely throughout the south, is one of the best fibrous plants known. It is coated with ten layers, which are very easily separated from the wood by crushing between iron rollers like a sugar mill; and that the hemp is almost indestructible in water. This may prove a valuable substitute for hemp, as it can be grown where that cannot, and at much less expense for culture and preparation. There are many things yet to be learned before we shall all become *book farmers*.

DISCOVERY OF A BED OF PHOSPHATE OF LIME AT HURDSTOWN NEW JERSEY.

I AM happy to inform you that your *prediction* is verified, and that your *hope* in regard to the discovery of other veins of phosphate of lime in this country, is realised. In the course of the past summer, Dr. C. T. Jackson and Mr. Francis Alger, of Boston, discovered a valuable and extensive deposit of massive phosphorite, (phosphate of lime,) in the town of Hurdstown, Morris county, New Jersey, and but a few miles from the Morris Canal. The mineral is *perfectly pure*, and is composed of 54 per cent. of lime, and 46 of phosphoric acid.

Last August, Mr. Alger forwarded to me a sample of 15 or 20 pounds of this phosphate, finely ground, with a request that I would experiment with it on my growing crops, but the lateness of the season prevented its application. In his letter to me, he said there was no trouble in making it into a perfectly fine powder, if that was thought best. The sample I received was from the size of coarse shot to fine flour, and of a brownish color. A portion of it, I treated with sulphuric acid, and then it became white, like the water-slaked white lime of Maine. No doubt, by the addition of the acid, it was converted into a bi-phosphate of lime, a much more soluble salt.

A few days since, I received a letter from Mr. Alger, in which he writes, that he has succeeded in getting a quantity of his phosphorite ground, and that he had sent 10 tons to England, whence he had received propositions for more, both for the purpose of manure, and for making, (when combined with other materials,) porcelain ware, and hopes the quantity may prove sufficient to meet the demands of both countries. In order to have its merits tested for manuring purposes, he will have the ground mineral put up in casks of 100 lbs. each. I have as yet no information as to the price it can be supplied to farmers. In its massive state, it is harder and heavier than carbonate of lime, its specific gravity being about three times that of water; but as there is no difficulty in making it into a perfectly fine powder, I presume it may be supplied to them at a cheap rate. Of its intrinsic value to the farmer for spreading upon his old pasture grounds, his orchards, and for the wheat and turnip crops, I think there can be but one opinion in the mind of any one who is at all familiar with English farming and English agricultural publications.

Bones are a combination of phosphoric acid and lime, but in less proportions than in the phosphorite. Now much, very much, of the

fertilising properties of bone manure is due to the phosphoric acid and lime. Millions of dollars are annually expended by the British farmers in the purchase of bone manure. Every year, there are vast importations into England of animal, and in many instances, of human bones, to be applied to the soil for raising food for that densely-populated island.

From official returns, it appears there were imported into England from July 1st, 1844, to July 1st, 1845, 137,300 tons of guano. The cost price to the farmers of this manure was estimated at £1,247,600, or over \$6,230,000, spent by British farmers in one year for a manure which was unknown in English agriculture five years previous to that time. A very large percentage of the fertilising principle of guano is due to the phosphates it contains, derived from the finely-communited and digested bones of the fish upon which the birds subsisted. So far, then, as the phosphates contained in the guano existed, it served as a substitute for bone manure—notwithstanding the vast importation of the phosphates in the guano—bone manure was 30 per cent. dearer during 1844 and '45 than in the previous year; and I presume there are thousands of farmers in the United States who never even yet have seen, heard, nor read of bone dust as a manure.

There seems to have been some difference of opinion among prominent scientific writers on agriculture, as to what constituted the most valuable fertilising principles of bone manure. One class have asserted that it was wholly due to the inorganic part, the acid and lime, while others attribute nearly, or quite as much value to the organic part, the gelatine, oil, &c., of the bones; but plain common sense teaches us, and this backed up, too, by numerous well-attested facts, that there are soils upon which both the gelatine and the phosphate of lime of the bone manure are useful. On other soils, burned bones, and the mineral phosphate produce equally good results with the unburned or fresh bones; and there are other soils, where neither the organic nor inorganic portions of the bone manure produce any visible good effects, however large the quantity applied.

It has been said that mineral phosphate of lime existed in some parts of Spain in great abundance, and it was thought it might be obtained there in large quantities, so as partially to supply the English farmers with a substitute for bone manure. In 1843, Dr. Daubeny, Professor of Chemistry at Oxford, volunteered to explore the localities in the country where it was said to be so abundant. The phosphorite,

the great object of the journey, was found at a place called Logrosan, in the heart of Estramadura, but so far removed from the coast as to leave small hope of its being possible to export it profitably. However, the doctor was allowed to dig and carry away any quantity he liked. He obtained four mule loads, of 200 lbs. each, which he brought to England, and tried carefully-conducted experiments with it in comparison with several other kinds of manure (twelve kinds in all). The results of his experiment may be found in the London Agricultural Gazette, of April 4th, 1846, in which it will be seen that a given quantity of the phosphorite grew nearly as large crops as the same amount of bone manure; and Dr. D. now says, as "the Spanish phosphorite, which appears to act so beneficially, and is wholly destitute of organic matter, it seems to follow that the more valuable portion, at least of what is applied to the land, when bones are scattered over it, is the phosphate of lime, and not, as some have supposed, the oil, or gelatine."

Some three years ago, Professor Nesbit, of the Agricultural and Scientific School, Kennington, England, was visiting at the highly-cultivated and fertile farm of J. M. Paine, Esq., at Farnham. While rambling over the estate in company with Mr. P., he had pointed out to him many varieties of soils and marls, with which that part of the country abounds. One in particular, a "green marl," was mentioned by Mr. Paine, as being of a singular character. Whenever it came to the surface, the hops and wheat grew luxuriantly, almost without manure, and whenever the other lands were marked with it their fertility was remarkably increased. The professor took samples of it, and after submitting it to a series of most rigid and careful experiments in his laboratory, demonstrated the existence of phosphoric acid equivalent to from 4 to 5 per cent. of bone earth; and says the professor, "an extraordinary amount, and I believe almost unparalleled in the natural or chemical history of soils." And he adds that "bones contain about 50 per cent. of bone earth; so that 10 tons of the dried marl would, in its fertilising effect which is due to the phosphates, be equal to one ton of bones."

I shall experiment with the New-Jersey mineral the coming season, on different soils and crops, and perhaps, if you wish, may favor you with the results. [Favor us with them by all means—we can never be too well supplied with facts.—Eds.]

LEVI BARTLETT.

Warner, N. H., Feb., 1851.

SUPERIORITY OF SHORTHORN CATTLE.

It is well known to most of our readers, that an annual show of fat stock, of all kinds, is held in the month of December, at the Smithfield Market, London, England, which is by far the largest and best of anything of the kind in Europe. That for last December was superior, probably, to any one preceding it. To exhibit in class 8th, the following requisites were necessary:—

"Fattened cows of five years old, and upwards, without restriction as to feeding; yet, the kind, or kinds of food must be certified. Freemartins and spayed heifers are not qualified. 1st prize of £20, (about \$100,) and silver medal to the breeder, and gold medal, as the best cow or heifer in the 7th, 8th, and 9th classes,"

The above prize and medals were won by Mr. Gooch, of Norfolk, on a shorthorn cow five years and three months old. She was fed on linseed cake, (oil cake,) linseed and barley meal, mangold wurtzel, turnips, and hay. This is a kind of feed which does not equal our Indian meal; but as corn is not raised in England, it is too high priced to be fed to cattle, at a profit.

Mr. Moreton, one of the best practical farmers and most able writers on agriculture, in England, and now editor of the Agricultural Gazette, thus speaks of the above cow, in his remarks in his paper, on the stock at the Smithfield show; and let it be observed, that he has been an attendant on these shows, and a critical observer for 20 years.

"In class 8th, the prize silver and gold medal for cows went to a shorthorn animal, which eclipses, in our opinion, every beast of the kind in the show, and of any other show of our recollection. The color was, of all others, the most fashionable in a strawberry roan; the head, eyes, ears, and horns, faultless beyond comparison, and the carcass level, compact, and cylindrical, without any approach to equality in any animal of the exhibition. No specimen of a cow ever struck us so forcibly as a prominent type of the necessary character. The touch was soft but not silky, and fleshy without being placed in lumps. Our pleasure is truly sincere in giving this opinion of the animal. The second prize went to a shorthorn cow, of very good points, but completely shaded by the fore-mentioned animal."

When will the farmers of the United States awake to the superiority of this unequalled breed of cattle, and more generally rear them, or the beautiful Devons, instead of the miserable animals that now pervade the country? If

improved horses, cattle, sheep, swine, and poultry were generally reared throughout the country, it would add several millions annually to the value of our agricultural products.

DETERIORATION OF LAND BY IMPROVEMENT OF ANIMALS.

THE thought has sometimes found audible expression, even from respectable sources, that some people were so busily occupied by the improvement of their stock, as to neglect their land, and allow its absolute deterioration. We have had a pretty thorough acquaintance with breeders, both at home and abroad, and so far as our present observation is concerned, have never yet met with the instance, in which the improver of the animal was not also found to be the improver of the soil. We have a further knowledge through reliable publications, and oral testimony, of persons and countries not coming under our own observation, and we venture the assertion, that an instance in proof of the above, can scarcely be found within the entire range of savage and civilised society. Where the general farm stock has been intelligently bred and cared for, by the owner of both land and stock, the soil has invariably participated with the stock, in its improvement. The very presence of the animals on the land, implies this, as the crops are consumed on the premises, and the manure returned to the fields, is more than a compensation for the crops which feed the animals. Look at the countries most distinguished for the improvement of farm stock—England, Scotland, and Holland, and where is so much improvement of soil visible on any other equal surface of the globe?

We do not bring into this question, the partial improvement of some particular quadruped, or one of its families, as of the Arab racer, the Italian grey hound, nor the Dalmatian coach dog. Nor would we admit as illustrating this question, some sporting genius, who had given a very particular attention to an improved lot of fighting cocks, fancy pigeons, fox hounds, or trotting and racing horses; for the very constitution of mind which leads to the indulgence of this partial or morbid taste, disqualifies for the pursuit of the higher and more comprehensive talent, which is embodied in the nobler improvement of the varied utilitarian qualities of farm stock.

We hope the observation which has led to these remarks may not be repeated by intelligent writers, as it affords an excuse for some very good delvers, who are wonderfully painstaking and successful, in raising a fine quantity

of forage, roots, and grain, to feed to the most worthless lot of brutes that were ever suffered to infest Christendom.

CHEMISTRY OF MILK.—No. 1.

THE qualities of milk depend upon several circumstances, namely, the species of animal from which it is obtained, the kind of food from which it is formed, the period during which the animal has been in milk, and the season of the year in which it is given. The quantity of milk depends, also, upon the season of the year, the period the animal has been in milk, and the character of the food with which the animal has been supplied. To these several conditions, which affect the quality and quantity of milk, I may also add rest, exercise, and disease, as holding an important place in the list of causes, and which are important in modifying the character of this secretion.

Some of the causes which affect the milk of animals, it will be perceived, may be substantially controlled, or may be so far controlled, as to exert an important influence upon it, for good or bad; and hence, should be well considered, and well understood, by those who pursue this kind of husbandry. That food modifies the character of milk, is proved by its taste. Onions, leeks, and turnips, together with many other substances, impart their peculiar taste to it, and it is highly probable that there is in the milk, something more than the peculiar aroma of the vegetables I have named, though I believe the substantial change may be much less than that which results from the use of certain kinds of food. It is my object to point out some of these changes in this important nutriment, in a series of articles which I propose to communicate. It is a subject which has received but little attention in this country, and so far as I know, no direct experiments have been instituted to determine the influence of food and circumstances upon its quality and quantity. Another point which I have omitted, is the question in regard to the value of the different breeds of cattle for milk, and especially, their more specific value for the production of cheese or butter. It is true that an approximate value, or an estimated value, is laid upon the several breeds, for the production of milk, and occasionally, for the production of butter. There is, no doubt, decided differences in the breeds for milk, which run through their generations, and is characteristic of them; still, I doubt very much whether their value has been, as yet, really expressed.

I have stated that the quality and quantity of milk depends, in part, upon the species of animal which produces it. There is, however, this fact to be born in mind: The elements of milk are the same in all mammiferous animals, and the difference consists in the proportions in which these elements are combined in the fluid. Milk is always white, is formed, or in other words, secreted, by an organ called the mammary gland, the structure of which is precisely the same in all animals. These glands vary in number from two to many, situated in pairs, upon the abdominal or thoracic face of the animal. There are three important constituents in all kinds of milk, namely, cheese or casein, butter, and sugar; These are held in solution by water, holding in solution, also, a small quantity of soda, which is free, and which may be shown by the green color that is given to a solution of red or purple cabbage. There is also a small quantity of a substance termed extract, which is obtained in combination with sugar. Milk, when dried and burned to an ash, is found to contain phosphates of the earths and alkalies, potash and soda, in combination with chlorine. Phosphoric acid, lime, magnesia, potash, iron, soda and chlorine form the principal elements of the inorganic part, or ash.

The following analyses of milk, by different chemists, I have copied for the purpose of giving a comparative view of the composition of that of different animals:—

	Cow.	Ass.	Goat.	Ewe.	Bitch.
Water,	85.70	91.63	86.80	85.62	65.74
Dry matter,	14.30	8.35	13.20	—	34.26
Butter,	4.00	1.10	3.20	4.20	16.20
Casein,	7.30	18.20	4.20	4.51	17.40
Sugar and extract,	2.80	6.08	5.28	4.20	2.90
Salts,	0.62	0.34	0.58	—	1.50

In addition to the foregoing, I may add that of the composition of the milk of the human female, which really forms another variety, differing as it does in the proportions of its elements. Thus it contains

Water,	88.36
Dry matter,	11.64
Butter,	2.53
Casein,	3.43
Sugar and extract,	4.82
Salts,	0.23

In the human female, the butter is reduced considerably, while the sugar is increased in proportion. It comes up in casein to the ordinary standard of the milk of the cow in summer. The casein of the milk of the cow, in the foregoing column, is considerably above the average of summer milk, or that which is made from grass. As I have already stated, the elements of all kinds of milk are the same; the varieties result from a different combination of those

elements. The milk of the bitch, a flesh feeder, is extremely rich in butter and cheese, and very poor, comparatively, in sugar; while, in the ass and goat, the proportion of sugar is large, and the butter small.

Having given a comparative view of the normal compositions of milk, I shall proceed in the next place, to the consideration of the composition of milk as it is determined by a variety of extraneous circumstances, and by the different kinds of food upon which the animal subsists.

E. EMMONS.

Albany, N. Y., Feb., 1851.

The above valuable article, from Professor Emmons, is the first of a series which he will write for the *Agriculturist*. They will be written in as plain and simple a style as it is possible well to use, in order to popularise the subject. We hope our readers will peruse them with attention, and if necessary, study them till perfectly familiar with the language and ideas. This is the only way to progress in knowledge, and he is a dullard who will not take this pains, and deserves the contempt of all enlightened farmers. These observations will apply to other articles which appear from time to time in our journal.

MANAGEMENT OF MANURE OR COMPOST HEAPS.

As the collection of manure is admitted on all hands to be the prime source of agricultural prosperity, I submit the following, on the management of certain matters, with a view to that object:—

The first thing to be attended to is, the selection of a suitable spot for a manure heap. This should be on the top of some rising ground, or on a ground, at least, so level that there can be no run of water to and from it, in case of violent rains. A true regard to economy, will also suggest that it should be placed on some field for which benefit it is mainly intended.

Having marked out the ground, say 25 feet by 15, or any other dimensions suitable to your means, sink stakes three of four inches in diameter, two feet below the surface of the ground, and rising to any convenient height above, at each corner, and at proper distances along the sides and ends. Now collect from the woods, sufficient leaf mould or rich virgin soil to cover the whole space inclosed, one foot deep, laying old rails, or any other material at hand fit for the purpose, along the inside of the stakes, as the mould rises, to confine it within its place. Next, take from the stalls of your animals, (the way

of managing which, will presently be given,) as much manure as will cover this mould all over equally, to the depth of one foot, except the sides and ends, which should invariably be mould only, for at least, six inches from the rails, by which means it will be perceived that the rich and enriching material will be so cased up as to prevent an escape of the gases. Then cover this layer of manure, as soon as may be, in order to prevent loss by evaporation, with mould from the woods, to the depth of six inches, and cover the whole with any kind of straw, as wheat, oat, barley, rye, or buckwheat, one foot deep. This will do much to enrich the surface, at the same time that it prevents injury from the sun and wind. Leaves will do, but straw is much better. [?] Let it stand in this state until your stalls again require cleaning. You will then remove the straw, and spread another layer of manure, except the sides and ends, to the depth of one foot, and over that, a new layer of mould six inches deep, as before, finally replacing the straw as in the first instance. Go on repeating the process till you have got the heap to the top of the stakes; then replace the straw and let the whole stand till required for use, commencing a new heap anywhere else most convenient.

As it may be thought the layers of manure would be too thick, I will now give some directions for the management of the horse stable, cattle stalls, hog pens, &c., from which it is to be taken. Before entering upon this, however, I would pause one moment to remind the reader of what he has been again and again told in this valuable journal, namely, that any animal that is worth keeping at all is, on all accounts, worth keeping well. Probably there is nothing in which the farmer errs so fatally to himself, as in the system of starvation so often pursued, with regard to his poor, suffering brutes. One animal well fed is of more profit in the end, than three half fed; and for the same reasons, the manure from one well fed, is worth all the poverty-stricken droppings of three times its number, half starved. Few things are more evident to reason than these; and yet, there are very few things which some men of intelligence are so slow to receive and act upon. It is with us, respecting animals, very much as with regard to acres; every one is crying "more, more;" when, in nine cases out of ten, every individual acquisition is a positive and material loss. It would be difficult to lay down a rule on this subject, of universal applicability. This much, however, may safely be said; if you

want good animals, and good rich manure, (which, if properly managed, will always be a fair compensation for the food consumed in making it,) you must not stint your animals; you must feed as nearly to the full, in quantity and quality, as you can without waste.

Another rule highly necessary to success in manufacturing manure is, that every animal on a plantation should be housed at night, the year round; and in winter, by day, except so much time as is necessary for them to get water, and take sufficient exercise. In very cold weather, they should be let out only to get water, and then immediately be put up again. This is the writer's own rule, and he finds it works well in every case, except in regard to hogs, which, for some reason, do not appear to bear confinement in the day time, in this climate. This practice is rare at the south. If there is another instance of it in North Carolina, he is not aware of it. The advantages of it, however, are obvious, and sooner or later it will be adopted by all.

Into the stalls of these animals, before they are allowed to enter, mould should be thrown, to the depth of one foot. As soon as this has become saturated, a mixture of virgin soil, leaves, and old logs, sufficiently decayed to break up finely, together with the scrapings from beneath and around them, should from time to time be added in sufficient quantities to keep all dry and comfortable. A little shelled corn thrown into the stalls and pens, will induce the hogs to root, and mix up the whole together, in the best manner, at no cost. When the accumulation has become too great for convenience, let it be taken out and put upon the pile, as above directed. Before the animals are again put in, throw mould, as at first, or any material fitted to absorb and retain the urine and juices, to the depth of one foot. From this, it will be seen that no manure goes into the pile in a state tending to waste. When required for use, the pile is cut down perpendicularly, and as evenly as possible, in order to pulverise it well, and make the whole mixture equal.

The writer has now pursued this plan to a greater or less extent for several years. Its advantages are, that it saves the expense of all tedious preparations to prevent the escape of fertilising matter. It is adapted to every man's capacity, and every man's means. Nothing is ever seen escaping from one of these piles—no ammonia on a damp or frosty morning ascending like smoke from a furnace—a case so com-

mon where the contents of stables are thrown out without any admixture to absorb it. The rain never falls in more than sufficient quantities to afford the necessary moisture, while the straw always to be kept on top, is an effectual protection from sun and wind. Its tendency to promote the health and thriftiness of the animals must be obvious. Their stalls are always sweet and comfortable. Of course, this plan also saves the expense of building manure houses. Its superiority to the mode of managing these matters commonly recommended, that is, hollowing out the barn yard into the form of a ditch, and throwing the manure into it to be washed away and wasted by rain, wind, and sun, will readily appear. Animals should not be permitted to run in a barn yard except in going to and from their places of confinement; and to prevent any loss from this, it should be kept constantly covered with mould, leaves, straw, &c., which, once or twice a year may be scraped up to put on the heap between the layers of manure.

There are numerous other sources from which materials may be drawn to augment and enrich these heaps, such as weeds, the scrapings of garden walks, the contents of privies, fowl and pigeon houses, rotten chips, sawdust—a capital thing to throw into pigsties and cow stables—old rags, hog's hair, coal ashes, soap suds, dish water, urine from the chambers, which may be poured upon them daily, and last, though not least, corn cobs. These are sadly wasted at the south. Give a really good manager 10 acres of land, and the corn cobs that are burned, or thrown away upon some of our large southern plantations, and I verily believe, though as poor as poverty at the outset, he would in a few years become a very comfortable liver. By this plan, these will of course be preserved. Where corn is fed to hogs and horses in the ear, the cobs will be mixed up with the materials under foot where they are finally thrown; when shelled for family use, or other purposes, they should be carefully gathered up, and thrown upon the barn yard or into the hog pens.

A person who has not tried this plan, could hardly conceive how large a mass of rich fertilising matter may thus be collected in the course of a year from a very few animals, and how greatly, if well followed up, it will add to the value of landed property. It is well known that the whole mass by lying a sufficient time, and at last thoroughly mixed together, will become nearly as valuable as so much raw stable manure. While a place along side of it of equal, perhaps far greater original value, is

going perceptibly and rapidly to ruin, the one on which this, or some better system is pursued, will be quite as rapidly improving in beauty, fertility, and the various means of comfortable living. The garden, which at first produced scarcely anything eatable, begins to send forth daily its stores of the finest vegetables; the fields, which produced only sedge grass, and that with much ado, become loaded with yearly increasing crops of grain; bare, unsightly patches are clothed with rich verdure; the orchard, renewed and invigorated, teams with fruit sweet to the taste, healthful to the body, and delightful to the eye; everything looks cheerful, smiling, and happy. The very animals participate in the general blessing. Their glossy hides, their sportive motions, their indolence, and their ease testify their comfort, and the enjoyment they find in the abundance they have thus been made instrumental in creating around them.

T. S. W. MORT.

Belvoir, N. C., Feb. 18th, 1851.

Although the above admirable article was written for the latitude of North Carolina, it will suit, with slight modification, that of every state in the Union. The method of managing manure and muck heaps is one of the best we have ever seen; and what most highly recommends it, is, that it can be practised by the poorest, as well as the richest, and equally suit the man of a few acres or many. Those who have not plenty of straw or leaves from the woods to mix with their compost heaps, will do well to use plaster, charcoal dust, or sawdust. Plaster can always be had; and a peck of it to a cubic yard of compost, is quite sufficient to fix the ammonia and retain all the fertilising gases in the manure heap.

GREAT VALUE OF GUANO.

In proof of this, Captain Buller, of the English navy, lately made the following communication to the Royal Agricultural Society:—He instanced the example of a farm in his own hands, consisting of 80 acres of poor land, for the most part lately reclaimed from heath, and rented at 6s. per acre. For six years past, the whole of the grain and hay together, with about 80 tons a year of mangold wurtzel, carrots, or potatoes had been removed from this ground, and not a particle of any kind of manure restored or used, except guano and a little marl applied to the lightest ground, and ten loads of dung per acre, applied in one of the six years to three acres of potatoes. The white turnips have always fed

upon the ground; but everything else has been taken to a barn two miles distant. During the whole of these six years, the crops upon this land have been steadily increasing. Land, which, six years ago, was not of itself capable of producing ten bushels of barley per acre, will now produce from 30 to 40. Captain Buller stated that he applied guano to all the root crops, at the rate of about 5 cwt. per acre, for mangold wurtzel or carrots, which were to be taken off, and at the rate of 3 cwt. for white turnips. That he took five crops in four years, and that he considered he had grown this year, 140 tons of mangold wurtzel and carrots from seven acres of land.

BONE DUST AS MANURE.

WE unhesitatingly concede to guano the first rank among manures. To this, it is entitled by its holding *all* the required elements of vegetable food in a just combination, and these in the most available condition for assimilation by the growing plant. And without any question, next to guano, do we place bone dust. This, it is true, has not generally all the elements required for the full development of vegetable life, as is always the case with boiled or burnt bones, and such as have long been buried or exposed to the weather; yet, if still retaining the oil and fatty matter, the fibrine and other nitrogenised substances, so intimately blended in recent bone, it holds every material which constitute, by their varied association, the rich compounds afforded by the Peruvian guano.

The filings and sawing, such as is furnished by the button and other valuable manufactures of bone, are of this description. Nothing but sound, recent, healthy bone will suffice for this purpose, and it is the dust shavings derived from these fresh materials, that are fully entitled to the high merit of approaching to a successful competition with guano. The principal difference consists in this: That the various compounds of ammonia are already found in guano, and are prepared at the instant of contact with the soil, and yield up their substance to the claims of vegetable life, while those of the bone dust must first undergo decomposition in the soil before its value is felt. This, in the crude, unbroken bones, requires long years, perhaps a century or more, to effect; and the period is lessened in proportion as they have been artificially comminuted or broken up. In the filings, &c., above specified, this division of their particles has reached the utmost artificial limits. Nothing but the bringing into play the latent

chemical affinities of the multifarious elements of bones, can effect a further reduction or disassociation of their particles. This may be done, to a certain extent, with sulphuric and other acids, but far more economically by first mixing with the miscellaneous muck heap, and then with the soil. It is not so material, however, in what way, nor how associated, bone dust may finally reach its mother earth. When sufficiently reduced and mixed with the soil, its effects will be speedily and most beneficially felt.

The efficacy of bones has been long known and is now generally appreciated by all intelligent agriculturists. Mr. Palin says, "for pasture land, and especially the poorer kinds, there is nothing equal to bone manure, either as regards the permanency of its effects, or the production of a sweet luxurious herbage, of which all cattle are fond. Many thousand acres of the poor clay soils have been covered with this manure during the last eight or ten years." Many instances of the application of bones have been afforded in England, where the produce of old pastures have been augmented fully 300 per cent.; and an almost worthless production of weeds and rough grasses has been succeeded by a sweet succulent herbage, highly relished by animals. One English writer in the Royal Agricultural Journal says: "I have known many a poor, honest, but half-broken man raised from poverty to comparative independence, and many a sinking family saved from inevitable ruin, by the help of this wonderful manure." But it is useless to multiply testimony on this subject, as the value of this fertiliser is now fully appreciated by all intelligent farmers.

Our present object is to show to the initiated as well as the inexperienced, the large proportion of phosphoric acid, which is really the most important portion of the bone, which enters into many of our leading crops. It has long been known that the herbage in our pastures, clover, wheat, potatoes, turnips, corn, and many other of our products are largely benefitted by bones, but the really large proportion of phosphoric acid entering into their composition has seldom been understood, except to the more scientific reader.

Phosphoric acid consists of phosphorus 44, and oxygen 56 in every 100 parts. Phosphate of lime, or bone earth, is composed of phosphoric acid, combined with lime, in the proportion of 48½ per cent. of the former to 51½ per cent. of the latter.

Bones in their recent state vary as to the age of the individual and the species of animal

from which they are taken. The bones of all young animals consist of a much larger proportion of albuminous or nitrogenised matter, and consequently a less amount of phosphate of lime, having more the consistency of gristle, which, in advancing age, gives place to a larger quantity of phosphate of lime; thus rendering it brittle, and peculiarly liable to fracture. We often hear of a broken limb from the slightest fall of a person in advanced years, while a child often drops harmlessly from the eaves of a three-story house. The great disproportion of elastic, sinewy, albuminous matter, therefore, constitutes the real difference between the two.

The bone of the ox has been analysed by Berzelius and many other reliable chemists. The bones lost 38 per cent. by calcination, all of which is animal matter. Before calcination, they contained of

Phosphate of lime,	55.36
Fluate of lime, (Derbyshire spar,)	3.00
Carbonate of lime,	3.85
Phosphate of magnesia,	2.05
Soda, with some common salt,	2.45
Cartilage,	33.30
	100.00

Fourcroy and Vauquelin found some ox bones contained of

Gelatine and oil,	51.0
Phosphate of lime,	37.7
Carbonate of lime,	10.0
Phosphate of magnesia,	1.3
	100.0

The relative proportions of the constituents of bones are continually varying according to the age, variety, and even the condition of the same animal. But however they may differ, we have the assurance that any particles of matter entering into them will be of the highest utility as a fertiliser for maturing future crops.

In the following estimates of phosphoric acid, it must be borne in mind, that the proportions, like those constituting bones, vary materially with the different specimens analysed, with the age of the specimen, the circumstances under which it has been grown, and to some extent, with the variety subjected to analysis. These estimates were made by Messrs. Way and Ogston, and are entitled to our highest confidence.

The proportion of phosphoric acid varied in

the ash of the seed of oats from 18.3 to 29.16 per cent.

Straw and chaff,	2.86 to	7.02 per cent.
Seed of barley,	25.32 "	38.26 "
Straw,	3.24 "	7.20 "
Seed of maize, or Indian		
Corn,	— "	53.69 "
Stalks and leaves,	— "	8.09 "
Pith of cob,	— "	4.37 "
Seed of wheat,	40 "	49 "
Roots of the red carrot,	— "	12.31 "
Leaves,	— "	6.21 "
Leaves and head of cow		
cabbage,	— "	12.53 "
Stalk,	— "	19.57 "
Flowers of hops,	— "	17.33 "
Leaves,	— "	9.33 "
Seed of white mustard,	— "	44.97 "
Seed of turnip,	— "	40.17 "
Straw of flax,	7.53 "	8.48 "
Seed,	35.99 "	41.09 "
Potato tubers,	15.10 "	17.68 "
Potato haulm,	2.27 "	6.62 "
Various grasses,	6.25 "	12.07 "

In the absence of a full supply of other manures, if any of our farmers omit using bone dust on their crops, when it can be procured at a fair price, after fully understanding its value, we say they ought to be independent in their income, irrespective of profit on their crops.

ADVANTAGES OF SYSTEMATIC ARRANGEMENT.—

It is well known, that in domestic economy, good housekeepers do actually derive this incidental advantage from a day of rest through the week: One day is devoted to washing; one to ironing; one to cleaning house; one to mending; one to baking; so that by Saturday night, everything is brought to a comely state. None of these things are left for the approaching week. Everything is arranged and in order, as if she did not expect to live another week. Men should do the same on their farms. If they did, they would thrive and prosper—*Blake's Farmers' Every-Day Book*.

WHO CULTIVATES SAINFOIN IN THE UNITED STATES?—We should be glad to hear of some one who raises this valuable crop—almost invaluable on strong calcareous soil—and the result of their trials. An English farmer says he has often stopped the scours in his young stock by turning them on a field of sainfoin aftermath (second crop); and that this has often effectually checked the disease when nothing else would.

Ladies' Department.

THE FARMER.

Of all pursuits by men invented
The plowman is the best contented;
His calling's good, his profit's high,
And on his labors *all* rely;
Mechanics all by him are fed,
Of him, the merchants seek their bread;
His hands give meat to everything
Up from the beggar to the king.
The milk and honey, corn and wheat
Are by his labors made complete;
Our clothes, from him must first arise,
To deck the fop, to dress the wise.
We then by vote may justly state
The farmer's rank among the great;
More independent than them all,
Who dwell upon this earthly ball.
All hail! ye farmers, young and old,
Push on your plow with courage bold;
Your wealth arises from your clod,
Your independence from your God.
If, then, the plow supports the nation,
And men of rank in every station,
Let kings to farmers make a bow,
And every man procure a plow.

H. N. W.

Poplar Ridge, Cayuga Co., N. Y.

SMALL SWEET COURTESIES OF LIFE.

THE following excellent advice was given by the late William Wirt to his daughter, and may be read with profit by every female or lady in the land:—

"I want to tell you a secret. The way to make yourself pleasing to others, is to show that you care for them. The whole world is like the miller at Mansfield, 'who cared for nobody'—no, not he—because nobody cared for him.' And the whole world will serve you so, if you will give them the same cause. Let every one see, therefore, that you do care for them, by showing them what Sterne so happily calls 'the small sweet courtesies of life,' those courtesies in which there is no parade, whose voice is too still to tease, and which manifest themselves by tender and affectionate looks, and little kind acts of attention; giving others the preference in every little enjoyment, at the table, in the field, walking, sitting, or standing. This is the spirit that gives to your time of life, and to your sex, its sweetest charms. It constitutes the sum total of all the witchcraft of woman. Let the world see that your first care is for yourself, and you will spread the solitude of the upas tree around you in the same way, by the emanation of a poison which kills all the juices of affection in its neighborhood. Such a girl may be admired for her understanding and accomplishments, but she will never be beloved.

"The seeds of love can ever grow under the warm and genial influence of kind feelings and affectionate manners. Vivacity goes a great way in young persons. It calls attention to her who displays it; and if it then be found as-

sociated with a generous sensibility, its execution is irresistible."

TO MAKE GREEN SALVE.—Take freshly-gathered white lily flowers, broad-leaved, common plantain, and chickweed, each, as much as can be grasped in a man's hand; one pound of newly-churned butter, without salt; one pound of mutton suet, melted and strained; one pound of bees wax; and one pound of rosin. Melt the suet and butter together, and boil in them the herbs, until the juice is all extracted; then strain through a cloth, and add the rosin and wax. When melted and well mixed, strain again into a queens-ware or earthen pan, and stir till cold, to prevent separation. An excellent cooling and healing salve for wounds and burns. M.

TO IRON SILKS.—Silk cannot be ironed smoothly so as to press out all the creases, without first sprinkling it with water, and rolling it up tightly in a towel—letting it rest for an hour or two. If the iron is the least too hot, it will injure the color, and it should first be tried on an old piece of the same silk. Bright-colored silks or ribbons, such as pink, yellow, green, &c., always change color on the application of an iron. Black, brown, olive, grey, &c., generally look very well after ironing. Silks should always be ironed on the wrong side.

EDGEWOOD PUDDING, OR DESERT CAKE.—With a moderate-sized coffee cup of sugar, beat four eggs, and then add two cups of molasses, and continue the beating until well done. Of flour sifted light, add five cups; butter melted, one cup; sweet milk, one cup (if half cream it is none the worse); one teaspoonful dissolved in warm water, of carbonate of soda, or saleratus will do, and one small tablespoonful of ginger. Mix well, and bake in the same manner as you would pound cake. Serve hot or cold, for dessert or tea, with or without sauce.

GLENWOOD CAKE.—Substitute loaf sugar in place of the brown, as in the above recipe, and clean syrup in place of molasses, and a nutmeg for the ginger, and you have a light-colored cake, quick made, very good, and not so rich as to give the dyspepsia to everybody that eats of it.

GLENWOOD WAFFLES.—Beat two eggs, and add a pint and a half of milk; a little salt, and a pint each of flour and cold boiled rice; beat up the whole into a smooth batter and bake to a crisp.

Foreign Agricultural News.

By the steamer Asia we are in receipt of our foreign journals to the 1st inst.

Cotton advanced again, and had got back to about the same prices as per our last. Most other American products remained with little or no change.

The Shantung Cabbage.—A correspondent at Shanghai, writes to a gentleman in England, that he is about to send him some seeds of the Shantung cabbage, which one of the French missionaries had procured in the north of China. He says that it somewhat resembles the Savoy in appearance, is of a delicious flavor, and weighs 60 lbs. It is supposed that July or August is the right month for sowing.

To Accelerate the Germination of Seeds.—When a gardener has some choice and scarce seeds, or when he is endeavoring to raise a particularly early crop, he takes more than ordinary care with them. He selects some good soil, sows his seeds, waters them enough, but not too much, and takes the greatest care to fit all the conditions to the nature and requirements of the young plants. If he is anxious to hurry on the germination of the seeds, so as to bring the young plants forward as rapidly as possible, he gives them a little bottom heat, sowing the seeds in fine mould resting on half-rotten dung, because, under those circumstances, the gentle heat of the still fermenting manure, and the vapors which it gives out, are highly favorable to the germination of the seeds. This is one of the best known modes of raising young plants; for notwithstanding all that has been said about seed steeping and other wonderful modes of accelerating the growth of plants, we have, at the present time, no more powerful mode of aiding germination, and forcing the growth of young plants. This is the plan adopted by the best gardeners with their choicest seeds.—*Gardeners' Chronicle.*

The World's Exhibition.—Her Majesty's Commissioners have made the following regulations respecting the admission of visitors:—The exhibition will be open every day, Sundays excepted. The charges for admission will be as follows:—Season ticket for a gentleman, £3 3s.; for a lady, £2 2s. These tickets are not transferable, but they will entitle the owner to admission on all occasions on which the exhibition is open to the public. The commissioners reserve to themselves the power of raising the price of the season tickets when the first issue is exhausted, should circumstances render it advisable. On the first day of exhibition, season tickets only will be available, and no money will be received at the doors of entrance on that day. On the second and third days, the price of admission on entrance will be (each day), £1; on the fourth day of exhibition, 5s.; to be reduced on the 22d day to 1s. From the 22d day, the price of admission will be as follows:—On Mondays, Tuesdays, Wednesdays, and Thursdays in each week, 1s.; on Fridays, 2s. 6d.; on Saturdays, 5s. No change will be given at the doors. This regulation is necessary to prevent the inconvenience and confu-

sion which would arise from the interruption or delay at the entrances. The progress of parcelling off the allotments of each nation is now progressing rapidly. The first consignment which has been received for exhibition, is a milliner's box, containing two caps of a novel pattern. Upwards of £100 were taken at the door on a day for the admission of visitors, and the receipts are said to be steadily on the increase, so great is the curiosity to examine the inside of the "Crystal Palace."

The Pine and Cedar Forests of California.—Of all the wonders I have ever seen in the vegetable kingdom, nothing will bear comparison with the magnificent and lofty growth of cedars and pines which embellish the hills and mountains that lead to, and make up the great Sierra Nevada range. The magnificence and grandeur of scenes in which these trees abound, cannot be imagined by any man who has not seen them, and felt the awe and sublimity to which they give rise. I have counted in a circle of 50 feet in diameter, 13 pine trees, not one of which was less than three feet in diameter, nor less than 250 feet in height, nor was any of them marked by the slightest curve or inclination. They are the inimitable and lofty monuments of nature, uninfluenced by sweeping storms and winds, unbent and undecayed by a centurian age. Not a limb nor a knot can be found upon their bodies until you reach an altitude of from 100 to 200 feet, beyond which height they continue to grow until their towering majesty over-awes all surrounding objects, and affords a fit refuge for the noble bird which adorns the banner of the country. No man can travel through these scenes without feeling that the grandeur of Omnipotence itself is teaching him his finite and insignificant powers. Such was the moral influences of these leviathan growths of cedars and pines upon my mind, I would not have dared have given entertainment to a fugitive thought against the supremacy, wisdom, and power of Jehovah. Such are the pine and cedar forests of California. And when you reflect that they cover an area of hundreds, if not thousands of square miles, you are prepared to admit the importance of this claim, which we would urge upon the consideration of our friends.—*Toronto Globe.*

Grease for Carts, &c.—The following composition is recommended by a writer in the "Independence Belge," for greasing carts and other agricultural implements:—Take 4 lbs. of India rubber, dissolved in a proper liquid, 1 lb. of gelatine, 10 lbs. of carbonate of soda, 45 quarts of animal or vegetable oil, and as much water; boil the water with the carbonate of soda and gelatine, then add the India rubber and the oil, stir the mixture well until it forms a homogeneous liquid. The above proportions may be varied, and if the India rubber and oil are previously purified, the carbonate of soda is unnecessary. The above mixture will be found very useful not only for greasing carts, &c., but also for keeping the farm harnesses in order.—*Flore des Serres.*

Editors' Table.

THE FARMERS' CLUB, of the American Institute, have appointed Tuesday, the 1st day of April, at 12, M., for the discussion of Indian Corn, and the preparation of it for food. Also, Tuesday, the 8th day of April, for the discussion of cattle of the various breeds, and the best method of breeding. Persons interested are invited to attend at the Repository of the Institute, 351 Broadway.

AN AGRICULTURAL TRUTH.—He who is within scent of a dunghill smells that which his crops would have eaten, if he had permitted it. Instead of manuring his land, he manures the atmosphere, and before his dunghill is finished turning, he has manured another parish, and perhaps another country.—*Arthur Young*.

YOUNG ON THE STRUCTURE AND THE DISEASES OF THE HORSE, with their remedies, brought down to 1849, by W. C. Spooner; to which is prefixed an account of the breeds of the United States, compiled by Henry S. Randall. Derby & Miller, Auburn, N. Y. Any one at all conversant with that noble animal, the horse, is well aware of the merits of Young's admirable work on this subject. Mr. Spooner, a veterinary surgeon of high standing, wrote a valuable supplement for the late English edition, bringing the science down to 1849. This, Mr. Randall, with excellent judgment, has incorporated into the body of the volume before us, in footnotes, under the different appropriate heads of the work. We think this quite an improvement on the English edition. Mr. Randall's part of the work is well done; and as the publishers have brought it out in handsome style, we trust the book will have a large sale.

MODELS OF FRUIT.—We have never seen so fine life-like specimen of modelled fruits as were recently shown us by Mr. T. Glover, of Fishkill Landing, N. Y. They did not represent the faultless fancy sketch so often shown by artists, but like Cromwell's leathern face, with the mask fully developed, they showed the dents and defacements incident to the peculiar fruit illustrated. A bystander, to whom we offered one, very gravely put it to his nose to detect the delicious odor such tempting specimens yield. This art is capable of subserving the advancement of horticulture in various ways; and to its votaries, we most heartily commend the specimens and the artist by whom they have been furnished. Samples of them may be seen at our office.

SALE OF MR. MORRIS' SHORTHORN STOCK.—By reference to the advertisement page 135, it will be seen that Mr. Lewis G. Morris, of Mount Fordham, Westchester county, is to have a large sale of grade and thoroughbred short horn stock. These animals have been bred with direct reference to great milking qualities, in which Mr. M. has been particularly successful. The grades are mostly, if not all, crossed with celebrated Dutch milking stock. Quite a number of similar-bred animals were sold by Mr. M. at his great sale in the autumn of 1849; and we are informed that generally, those who then purchased, are highly gratified with the great milking properties of the cows then obtained. Mr.

Morris imported last year several high-bred shorthorns, from the celebrated herd of the late Thomas Bates, Esq., of Yorkshire; he has also imported a few fine Devons; and a small flock of choice Southdown sheep, bred by the celebrated Jonas Webb, of Babraham, England.

THE SOIL OF THE SOUTH.—This is a new work just started at Columbus, Georgia, 16 pages quarto, monthly, price one dollar a year, Charles A. Peabody, Esq. and Col. James M. Chambers, the supervisory editors, assisted by quite a number of highly talented and practical planters. Col. Chambers is the publisher. We like the first number of this paper very much; it is spirited, practical, and common sense, which is all that is required to make periodicals of this class. We have no doubt it will exercise a highly beneficial influence on the agriculture of the south, and it has our best wishes for its success. If planters and farmers would read fewer political papers and more agricultural, it would be infinitely better for them, both in an intellectual and pecuniary point of view.

CATTLE.—By Young and W. C. L. Martin, being a treatise on their breeds, management, and diseases, comprising a full history of the various races; their origin, breeding, and merits; their capacity for beef and milk; the nature and treatment of their diseases; the whole forming a complete guide for the farmer, the amateur, and the veterinary surgeon; with 100 illustrations. Edited by A. Stevens. New York: C. M. Saxton. pp. 470. 12mo. Price, in muslin, \$1.50. This useful and much-needed work, announced some time since as in preparation, very opportunely has come to hand. We need not reiterate our opinion of the capabilities of the editor, nor of the service the publisher is doing to his countrymen in issuing similar works. Of these, the reader must already be aware. Suffice it to say, the book is neatly and handsomely got up, and is just the thing a majority of our farmers require. There is one feature, however, in the work, that is new, and to which we will briefly allude. The author, in the treatment of diseases has adopted the system of Hahnemann, called "homœopathy," which is based on one general law, *similia, similibus curantur*; that is, "like cures like," or in other words, "a system of medicine, which cures diseases by such agents as produce similar symptoms, when taken by an individual in health." These medicines are given in extremely small doses, one of which is administered at a time, and the substances employed must be perfectly pure. The medicines are prepared by able chemists in this city, and may be had on reasonable terms.

IMMIGRANTS continue to pour into New York from abroad in great numbers. Let them come, but in the mean time let measures be taken by an organised company with either public or private means, to send them out of the city, to make them cultivators of the soil, instead of drones and depredators upon the industry of the people. Help them out to the vast territories of fertile soil in the west, and teach them there to help themselves. They will soon become producers instead of consumers.

Review of the Market.

PRICES CURRENT IN NEW YORK, MARCH 18, 1851.

ASHES, Pot,.....	100 lbs.	\$5.37	@	\$5.62
Pearl,.....	do.	5.69	"	5.75
BALE ROPE,.....	lb.	9	"	11
BARK, Quercitron,.....	ton.	33.00	"	35.00
BEANS, White,.....	bu.	75	"	80
BESWAX, American, Yellow,.....	lb.	20	"	26
BOLT ROPE,.....	"	11	"	12
BONES, Ground,.....	bu.	45	"	55
BRISTLES, American,.....	lb.	25	"	65
BUTTER, Table,.....	"	15	"	25
Shipping,.....	"	9	"	15
CANDLES, Mould, Tallow,.....	"	10	"	13
Sperma,.....	"	25	"	50
Stearine,.....	"	25	"	30
CHEESE,.....	"	5	"	10
COAL, Anthracite,.....	2,000 lbs.	5.50	"	6.00
CORDAGE, American,.....	lb.	11	"	13
COTTON,.....	"	10	"	14
COTTON BAGGING, Am. hemp,.....	yard.	15	"	16
FEATHERS,.....	lb.	27	"	40
FLAX, American,.....	"	8	"	9
FLOUR,.....	bbl.	3.62	"	4.12
Ordinary,.....	"	4.18	"	5.00
Fancy,.....	"	5.25	"	6.75
Buckwheat,.....	"	3.87	"	4.00
Rye,.....	"	1.00	"	1.30
GRAIN—Wheat, Western,.....	bu.	90	"	1.10
" Red and Mixed,.....	"	77	"	79
Rye,.....	"	67	"	70
Corn, Northern,.....	"	66	"	68
" Southern,.....	"	1.10	"	1.25
Barley,.....	"	48	"	53
Oats,.....	"	47.50	"	50.00
GUANO, Peruvian,.....	2,000 lbs.	47.50	"	50.00
Patagonian,.....	do.	60	"	70
HAY, in Bales,.....	100 lbs.	225.00	"	230.00
HEMP, Russia, Clean,.....	ton.	180.00	"	200.00
American, Water-rotted,.....	"	140.00	"	175.00
" Dew-rotted,.....	"	10	"	11 1/2
HIDES, Southern, Dry,.....	lb.	6	"	35
HOPS,.....	100	2.00	"	10.00
HORNS,.....	100 lbs.	4.77	"	5.00
LEAD, Pig,.....	lb.	5	"	7
Pipes for Pumps, &c.,.....	lb.	7	"	8 1/2
LARD,.....	bbl.	3.00	"	3.37
MEAL, Corn,.....	gallon.	29	"	31
MOLASSES, New-Orleans,.....	lb.	7 1/2	"	9
MUSTARD, American,.....	bbl.	1.75	"	2.00
NAVAL STORES—Tar,.....	bbl.	1.25	"	1.75
" Pitch,.....	"	1.15	"	1.30
Rosin,.....	"	2.44	"	2.87
Turpentine,.....	gallon.	35	"	37
Spirits of Turpentine,.....	"	75	"	80
OIL, Linseed, American,.....	"	1.05	"	1.15
Castor,.....	"	65	"	75
Lard,.....	"	1.25	"	1.50
OIL CAKE,.....	100 lbs.	75	"	1.50
PEAS, Field,.....	bu.	1.75	"	2.30
Black-eyed,.....	2	2.50	"	3.25
PLASTER OF PARIS,.....	ton.	1.12	"	1.25
Ground, in Barrels of 300 lbs. bbl.	"	8.00	"	11.00
PROVISIONS—Beef, Mess,.....	bbl.	4.00	"	6.00
" Prime,.....	"	6	"	12
" Smoked,.....	lb.	4	"	6
Rounds, in Pickle.....	"	10.00	"	13.00
Pork, Mess,.....	bbl.	6.50	"	10.00
" Prime,.....	"	3	"	4 1/2
Bacon Sides, Smoked,.....	"	3	"	4
" in Pickle,.....	"	5	"	9
Hams, Smoked,.....	"	4	"	7
" Pickled,.....	"	4	"	6
Shoulders, Smoked,.....	"	3	"	5
" Pickled,.....	"	3.00	"	3.63
RICE,.....	100 lbs.	1.00	"	1.60
SALT,.....	sack.	20	"	35
" Common,.....	bu.	6 1/2	"	9 1/2
SEEDS—Clover,.....	lb.	2.00	"	4.00
Timothy,.....	bu.	1.60	"	1.70
Flax, Rough,.....	"	3	"	—
SODA, Ash, (80 per cent. soda),.....	lb.	1	"	—
Sulphate Soda, Ground,.....	"	5	"	8
SUGAR, New-Orleans,.....	"	35.00	"	37.00
SUMACH, American,.....	ton.	7	"	9
TALLOW,.....	lb.	15	"	20
TOBACCO,.....	"	15	"	60
Florida Wrappers,.....	"	23	"	24
WHISKEY, American,.....	gallon.	50	"	60
WOOLS, Saxony,.....	lb.	40	"	50
Merino,.....	"	30	"	40
Grade Merino,.....	"	20	"	30
Common,.....	"	20	"	30

REMARKS.—Barley is the only article of any moment that has changed in price since our last; and this has risen about 20 per cent.

The Weather has been unusually mild for the season, with copious rains. At present, the ground is covered with a considerable depth of snow.

TO CORRESPONDENTS.—Communications have been received from H. B. Rogers, Asa Snyder, C. H. Cleveland, John R. Page, D. H. Sherwood, J. R. Strate, J. B. D., Sampson Duffee, W. R. Field, Samuel Allen, R. Linsley, Gray, E. W. Farnham, B. Webster, Augustus A. Member of an Agricultural Society, T. S. Gold, James S. Laurence; also a paper on the Practical Utility of the Study of Entomology to the Farmer.

Construction of Ice Houses.—S. A. C.—See a paper on this subject at p. 23 of our seventh volume.

Characteristics of the Varieties of Indian Corn.—C. Greenport, N. Y.—The number of rows is not always characteristic of the variety of corn. Like many other cultivated plants, it is liable to "sport," or vary. Generally speaking, the King-Phillip or eight-rowed yellow corn, when cultivated in the same climate, is uniform in the number of its rows.

Garlic in Milk.—J. J. P.—We know of nothing that will remove the taste of garlic from milk without injuring its quality.

ACKNOWLEDGEMENTS.—Journal of the American Institute, devoted to the Promotion of Agriculture, Commerce, Manufactures, and the Arts; an Address delivered before the Plymouth-County Agricultural Society, at their Annual Exhibition at Bridgewater, Mass., in September last, by Charles T. Jackson, M. D., Chevalier de la Legion d'Honneur; Premiums and Gratuities awarded by the Massachusetts Horticultural Society, for 1850; Transactions of the Essex (Mass.) Agricultural Society for 1850.

GREAT SALE OF SUPERIOR, THOROUGH-BRED SHORTHORN CATTLE.—The subscriber having more stock than can well be sustained on his farm, will offer at public auction, about 30 head of his Improved Shorthorn Cattle, consisting of bulls, cows, heifers, and heifer and bull calves, on the 26th day of June next, at his farm, 3 1/2 miles from this city.

It is known to breeders of improved stock in this country and in Canada, that the proprietor of this herd, during the past 12 years, has, through the medium of importation from England, and selections from the best herds in this country, spared no expense to rear a herd of cattle from which superior animals could be safely drawn, for the improvement and crosses of other herds.

His importations have been derived from that eminent breeder, the late Thomas Bates, Esq., of Kirkclevington, Yorkshire, England, which herd, it is well known, has recently been disposed of at public sale, by his administrators, and dispersed in many hands, and can no longer be resorted to, as a whole, for improvement. The announcement of this sale created great interest in the minds of all shorthorn breeders in England, who seemed desirous to secure one or more of these animals to mingle with the blood of their herds. At the day of sale, there was found assembled, the largest audience ever before witnessed upon a similar occasion, numbering, as it was said, from 4,000 to 5,000 persons. Among them were the best breeders in England, and several from other countries. Some of the animals brought prices which seemed incredible to many.

In the herd now offered for sale, will be included the imported bull Duke of Wellington, and the premium bull Meteor. These are Bates' bulls, and their reputation, as stock getters, are too well known to need comment. I am, however, authorized, by Lewis F. Allen, Esq., of Black Rock, one of the most prominent breeders in this country, and who has had ample means for forming a judgment, "that in no instance, to his knowledge, has these two bulls been bred to shorthorn cows of other herds, previously imported into the United States, but what the produce were superior, in general qualities, to such herds."

Most of the stock which is now offered for sale has been bred from these two bulls. The proprietor having a young bull more remotely connected with the portion of the herd, which he retains, being about 14 in number, he can part with these two valuable bulls. There will be in the stock offered for sale six young bulls, from eight months to about two years old, in addition to the two named above. The remainder of the stock will be composed of cows, most of them possessing extraordinary milking qualities, heifer, and heifer calves, all fine in symmetry and good hands.

It is believed that no herd of shorthorns has ever been offered for sale in this country exhibiting more of the valuable combination of qualities which contribute to make up perfect animals.

A catalogue containing the pedigrees of these animals will be ready for delivery at an early period, in which the terms of sale will be fully stated. A credit will be given from 6 to 18 months. Gentlemen are invited to examine the herd at their convenience.

mar

GEO. VAIL, Troy, N. Y.

CHEMISTRY Made Easy, for the Use of Farmers. By J. Topham, M. A. Price 25 cents. C. M. SEXTON, 123 Fulton st., N. Y.

THE AMERICAN LIVE-STOCK INSUR-

ance Company, Vincennes, Indiana.
 Charter Unlimited. Granted January 2d, 1850.
CAPITAL \$50,000!

For the Insurance of Horses, Mules, Prize Bulls, Sheep, and Cattle,
 of every description, against the combined risks of Fire, Water,
 Accidents, and Disease.

Losses paid in 30 days after proof of death.

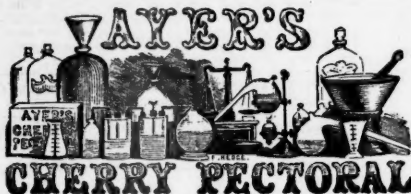
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AYER'S CHERRY PECTORAL

For the Cure of
 COUGHS, COLDS, HOARSENESS, BRON-
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Among the numerous discoveries science has made in this generation to facilitate the business of life, increase its enjoyment, and even prolong the term of human existence, none can be named of more real value to mankind, than this contribution of chemistry to the healing art. A vast trial of its virtues throughout this broad country has proved beyond a doubt, that no medicine nor combination of medicines yet known, can so surely control and cure the numerous varieties of pulmonary disease which have hitherto swept from our midst thousands and thousands every year. Indeed, there is now abundant reason to believe a remedy has at length been found which can be relied on to cure the most dangerous affections of the lungs. Our space here will not permit us to publish any proportion of the cures effected by its use, but we would present the following opinions of eminent men, and refer further inquiry to the circular, which the agent below named will always be pleased to furnish free, wherein are full particulars, and indisputable proof of these facts.

From the President of Amherst College, the celebrated Professor Hitchcock.—James C. Ayer, Sir: I have used your Cherry Pectoral in my own case of deep-seated bronchitis, and am satisfied from its chemical constitution, that it is an admirable compound for the relief of laryngeal and bronchial difficulties. If my opinion as to its superior character be of any service, you are at liberty to use it as you think proper.

EDWARD HITCHCOCK, LL. D.

From the widely celebrated Professor Stillman, M. D., LL. D., Professor of Chemistry, Mineralogy, &c., Yale College, Member of the Lit. Hist. Med. Phil. and Scientific Societies of America and Europe.—"I deem the Cherry Pectoral an admirable composition from some of the best articles in the Materia Medica, and a very effective remedy for the class of diseases it is intended to cure.

New Haven, Ct., Nov. 1st., 1849.

From one of the first Physicians in Maine.—"Dr. J. C. Ayer, Lowell, Dear Sir: I am now constantly using your Cherry Pectoral in my practice, and prefer it to any other medicine for pulmonary complaints. From observation of many severe cases, I am convinced it will cure coughs, colds, and diseases of the lungs, that have put to defiance all other remedies. I invariably recommend its use in cases of consumption, and consider it much the best remedy known for that disease.

Respectfully yours, I. S. CUSHMAN, M. D.

Saco, Me., April 26th., 1849.

Prepared and sold by James C. Ayer, Practical Chemist. Lowell, Mass. Also by druggists everywhere. m3t

FRUIT TREES FOR SALE.—50,000 Peach Trees, all of the best market varieties, at the following prices:—By the single hundred \$5. One thousand, \$45. And ten thousand for \$400. Also, 40,000 Apple Trees of the best market varieties, and of large size. By the single hundred, \$12.50, or one thousand for \$110. Nuts and packing, \$1 per hundred for Peach, and \$2 for Apple Trees. Catalogues will be forwarded to all applicants. ISAAC PULLEN,

Jan 4t

Hightstown, Mercer Co., New Jersey.

ENDLESS-CHAIN PUMPS, OR WATER

Elevators.—These highly approved machines operate upon the same principle as those used for grain. The elevator is made a part of an endless chain, that works over an iron wheel, and down into the water, around a pulley into the tube, through which a constant stream is made to flow into the pail, by simply turning the crank, attached to the wheel at the top, which any light hand can do with great ease. They are made of several sizes, and can be fitted up for any depth well, or cistern required. A New Use for Chain Pumps.—One of these of large bore, is the most efficient machine ever used for emptying the vaults of privies, where the contents are in a semi-liquid state.

A. B. ALLEN & Co., 180 and 191, Water st., N. Y.

DOMESTIC ANIMALS AT AUCTION.

—The postponed yearly sale of full-bred shorthorns and improved dairy stock, consisting of about 50 head, will come off at my farm on Tuesday, June 24th, 1851, at 12 o'clock, M. I shall dispose of all the improved dairy stock, which is composed of the finest shorthorns, with a slight cross of Amsterdam Dutch, which, some writers say, was part of the original ingredient which composed the improved shorthorns.

I am now breeding the shorthorns, Devons, and Ayrshires, each separately and pure, which, owing to the limits of my farm, make it necessary to confine myself to those three breeds. By the awards of the State Agricultural Society, the American Institute, and my own County Society, (with the exception of last year, when I was not a competitor at either,) it will fully appear that I have been a very successful exhibitor. The cow which won the first prize as a milker, at the American Institute last year, was bred by me, and composed of the above-alluded-to dairy stock. Several of the bulls got by Lamartine will be of the most appropriate age for efficient service the coming season. All cows and heifers old enough, will be warranted in calf at the day of sale, by my imported bull "Lord Eryholme," or my celebrated bull "Lamartine."

I own two thorough-bred Devon bulls; one, the celebrated old Major; the other, one and a half years old, imported by me from Devonshire. One of the above animals will be sold, which, I have not as yet determined.

A full catalogue, with the pedigree of each animal, will be published in due time, with minute description of sale, &c.

I also have a number of Suffolk sows, in pig to my imported boar, most of the progeny of which will be old enough to dispose of on that day.

I also have about 20 Southdown ewes, most of which I imported from the flock of Jonas Webb, and now in lamb to my imported buck "Babraham." Some of their buck lambs will be offered at auction on that day.

This sale will not only offer an opportunity to obtain stock from my previous herd, but will also enable persons to procure calves from my imported bull, lambs from my imported ram, and pigs from my imported boar, all of which animals were recently selected by me in person, when in England.

The mode of warranting the cows and heifers in calf, is this: In case they prove not to be so, it shall be optional with the purchaser, on his certificate of that fact, either to receive from me \$25, or to send the cow to my farm, and I will keep her the proper time, (free of expense,) to have her got in calf to either of my bulls, which he shall choose. I will give \$25 for any heifer calf from any of the cows or heifers sold at that sale, delivered on my farm, at two weeks old.

Stock purchased to be sent to a distance, will be delivered on shipboard or railroad in the city of New York, free of risk or expense to the purchaser.

Persons living at the south, in a climate to which it would not be well that stock should be transported, at that hot season of the year, may let such animals as they may purchase, remain with me until the proper season, and I will have them well taken care of, and charge only a reasonable price for their keep. One of my objects in breeding improved domestic animals, is to assist in distributing them throughout the Union, deeming it one, if not the most important feature to promote profit to the cultivator of the soil, and to benefit the consuming country at large.

All communications through the Post, Office please pre-pay, and I will pre-pay their answers, and also a catalogue if required. Catalogues will be to be had at all the principal Agricultural Warehouses, and offices of the principal Agricultural Journals, on and after the 1st day of June next. Persons wishing to view the stock at any time, will find my superintendent, Mr. Wilkinson, to give them the desired information when I am not at home.

Dated this 4th day of March, 1851, at Mount Fordham, Westchester county, eight miles from the city of New York, by Harlem Railroad. L. G. MORRIS.

apr 3t

NEW-ORLEANS AGRICULTURAL Warehouse, comprising a large assortment of Flows, Harrows, Cultivators, Fanning Mills, Corn Shellers, Corn and Cob Crushers, Straw Cutters, Ox Shovels, Ox Yokes, Grain Threshers, Corn Mills, Axes, Hoes, Shovels, and other Agricultural Implements. Also, Gardening Tools, Gunno, Plaster, Rock Salt, &c. &c. Orders will be executed for every article wanted by Planters.

Geo. W. SIZER, cor. of Magazine and Poydras sts.

NEW-YORK AGRICULTURAL WAREHOUSE AND SEED STORE,

A. B. ALLEN & CO. 189 AND 191 WATER STREET, NEW YORK.

THE SUBSCRIBERS keep constantly on hand, and offer for sale the largest and most complete assortment of Agricultural and Horticultural Implements, and Field and Garden Seeds in the United States, among which may be found the following:—

PLOWS, of a great variety of styles, sizes, and patterns, made in the most durable manner, and with the latest improvements, suited to all kinds of soils, crops, and modes of cultivation, embracing the celebrated Eagle, Miner & Horton, and Steel-Pointed, Self-Sharpening Plows; Lock-Coulter Plows, expressly for breaking up and working new land; Side-Hill, Sub-Soil, Double-Mold and Three-Furrow Plows. Also, a large variety of the most approved Southern plows, particularly adapted to cotton, sugar and rice cultivation.

MILK PANS.—Glass and Enamelled Iron Milk Pans, very desirable articles.

CHURNS.—Thermometer, Atmospheric, Kendall's, and other kinds.

HAND CULTIVATORS and Hand Plows are very useful implements in garden culture.

BATCHELDER'S CORN PLANTER, a very desirable and efficient machine. Price \$14.

SCYTHES.—Grass, Grain, Bush, and Lawn Scythes of the best kinds.

RAKES.—A large assortment Steel, Iron, and Wooden-headed Garden Rakes, and Lawn and Hay Rakes.

HORSE HAY RAKES.—We shall soon be supplied with new and highly-improved patterns.

REAPING AND MOWING MACHINES.—These have been fully tested, and embrace many late improvements, and we can highly recommend them.

MANURE FORKS, SHOVELS, SPADES, &c.—Our assortment we intend shall be unequalled either for variety or superior quality.

GRAIN DRILLS, a machine which every large grain planter should possess. We have them of the best patterns, embracing most valuable improvements.

GARDEN AND FIELD ROLLERS, made of any desired number of iron sections, one foot in width, and 20 and 28 inches diameter, for either hand or horse, very superior and exceedingly useful implements.

POTATO OR SMALL DOUBLE-MOLD Plow, the best implement made for hilling or digging potatoes, throwing them perfectly out of the hill. By extra moks, which can be attached, it makes a superior double mold-board plow. Price \$6.50 to \$8.

SEED SOWERS, to be worked either by horse or hand, of various styles. They plant seeds of all sizes at any required distance, opening the drills and covering the seed at one operation, and work admirably. Price of most approved, \$14.

GARDEN AND FIRE ENGINES, very useful machines, arranged on wheels, for watering gardens or walks, and afford protection from fire. They will throw a strong stream 40 feet high, are easily worked and not liable to get out of order. Also, small Garden Pumps and Eyringes of various styles.

HARROWS.—The most approved is Gedde's Double Triangular-Folding Harrow, which readily adapts itself to any unevenness of the soil, and with the same labor does the work better, and more thoroughly, than any other kind. Also, the common Square Harrow, and Double-Square or Scotch Harrow, which can be used either as a one or two-horse harrow. Also various other kinds.

CULTIVATORS.—Rodgers' Self-Sharpening Steel-Toothed is among the best; also a great variety of wrought and cast-tooth cultivators, both with and without wheels. The Universal Cultivator has an iron frame, arranged for different kinds of teeth among which are two moks, that, by transferring from one side to the other, the earth may be thrown either to or from the plants, as may be desired. All the different styles are made to expand or contract, to conform to the width of the rows.

TIMOTHY SEED, fresh reaped, a choice article.

POUDRETTE, a good article at manufacturers' prices.

MATTOCKS, Pick, Grubbing hoes adapted to all kinds of work.

GRINDSTONES of superior grit and quality, hung on improved friction rollers, to work either by foot or hand.

SMUT MACHINES, Pilkington's, the most approved for general use. Price \$60.

WAGONS AND CARTS made to order of any desired pattern, in the best manner.

GUANO.—A full supply of genuine Peruvian and Patagonian Guano.

BONE DUST, a very superior article, warranted perfectly pure.

GROUND PLASTER, OR GYPSUM, a pure article, put up in barrels, at low prices.

WATER RAMS, Suction, Force, and Endless-Chain Pumps; Leather, Gutta-Percha, India-Rubber Hose, Lead Pipe, &c.

HAY AND COTTON PRESSES.—Bullock's Progressive Power Presses, combining improvements which make them by far the best in use.

HORTICULTURAL TOOLS, a most complete assortment, consisting of Pruning Saws and Chisels, Pruning and Budding Knives, Pruning, Garden, Hedge, Flower and Vine Shears and Scissors, Garden Trowels, Forks, Hooks, &c.

HORTICULTURAL TOOL CHEST, containing a good assortment of implements, most of which screw to the same handle, a very handy and convenient article.

GRAIN MILLS, Corn and Cob Crushers, Fanning Mills, Corn Shellers, and Straw Cutters, a very large assortment of the best and latest improved kinds.

FIELD AND GARDEN SEEDS of every variety required in the United States, fresh, and of the choicest quality.

FOREIGN SEEDS, of superior quality and late importation.

GRASS SEEDS.—Ray Grass, Lucern, and White Dutch Clover. **GARDEN SEEDS**.—A large stock selected with care, expressly for the American Market.

TOBACCO, OIL AND SEED PRESSES, made on progressive principles, to take the place of the fly, draulic press. These are much more efficient than the latter; at the same time they are more economical. Their superior merits have been recently satisfactorily tested by several large oil manufacturers in this vicinity, where the machines may be seen in operation.

MACHINE SHOP AND FOUNDRY.—Connected with our Agricultural Warehouse and Seed Store, we have a large Machine Shop, with Steam Power and Foundry, where any implement and machine can be made to order, which is required for the Farm, Plantation, Garden, &c.

HORSE POWERS of all kinds, guaranteed the best in the United States. These embrace:

1st. The Chain Power, of our own manufacture, both single and double-gear, for one and two horses, which has never been equalled for lightness in running, strength, durability and economy. They are universally approved wherever they have been tried.

2d. The Bogardus Power, for one to four horses. These are compact and wholly of iron, and adapted to all kinds of work.

3d. Eddy's Circular Wrought-Iron Power, large cog wheels, one to six horses, a new and favorite power.

4th. Trimble's Iron-Sweep Power, for one to four horses.

5th. Warren's Iron-Sweep Power, for one or two horses.

A. B. ALLEN & CO.